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HERE IMAGINATION KNOWS NO BOUN

THE MORE THINGS CHANGE . .

he French have a phrase for it: "Plus ca change, plus c'est la même chose," which is to say, "The more things change, the more they remain the same." (And who, by the way, do you think penned that familiar epigram? Voltaire? Rousseau? Balzac? Why. no, it was Jean Baptiste Alphonse Karr, 1808-1890, journalist, novelist, and horticulturist, editor of the satirical monthly journal Les Guepes, where the immortal line appeared in January, 1849. And I didn't know it either, until I tracked it down in my 1910 edition of the Encyclopedia Britannica.) But I di-

gress. The more things change...

For example, the fear that apocalyptic chaos will descend upon the world when three zeros come rolling

up on the calendar. . . .

We all know that a terrible dread of the imminent end of the world of the imminent end of the world spread through Europe as A.D. 1000 approached. Charles Mackay's wonderful and ever-relevant book, Extraordinary Popular Delissions and the Madness of Crowds, first published in 1841 and rarely out of print ever since, tells the story this way:

way: trange idea had taken possession of the popular mind at the close
of the tenth and commencement of
the eleventh century. It was universally believed. . . that the thousand
years of the Apocalypse were near
completion, and that Jesus Christ
would descend upon Jerusalem to
judge mankind. All Christendom
was in commotion. A panic terror
seized upon the weak, the credulous, and the guilty, who in those

days formed more than nineteentwentieths of the population. Forsaking their homes, kindred, and occupation, they crowded to Jerusalem to await the coming of the lord. . . . To increase the panic, the stars were observed to fall from heaven, earthquakes to shake the land, and violent hurfuces to shake the and, and violent hurfuces to and more, especially the meteoric phenomena, were looked upon as the forerunners of the approaching judgments."

The source of all this seems to be the twentieth chapter of that wondrous work of fantasy, St. John's Book of Revelation, which tells how an angel seized Satan at the time of Christ's birth and "east him into the bottomless pit, and shut him up, and set a seal on him" that would hold him for a thousand years, and declares that "when the thousand years are expired, Satan shall be go out to gather his forces for the fire all battle between good and evil. I should note that later historians

have taken somewhat of a revision:
is stance concerning the degree of
panic that swept the Christian
world as what I suppose we can call
"YIK" drew near. Thus The Cambridge Medicul History notes, "Let
us, however, avoid laying too much
stress upon these allusions to the final cataclysm predicted in the Apocalpyse for the period when the thousand years should be fulfilled... A
wrongly interpreted, account for
this erroneous impression. As the
thousandty wer approached, the

people small and great, priests and lay folk, continued the same way of life as in the past, without being alarmed by those apocalyptic threats in which, even after the thousandth year was past, certain gloomy spirits continued to indulge.

Be that as it may, another millennium is dragging itself toward its finish, and we are once again confronted by millenarian cries of apocalyptic terror as the dreaded Triple Zero presents its baleful self. And there are two very significant differences between whatever millennial fears swept the world in A.D. 999 and those that are popping up now.

One is that the first time we faced all this, A.D. 1000 was Y1K only for a fraction of the world's population. The people of China, Japan, India. the Islamic countries, black Africa, and both Americas, for all of whom Christianity was at best a bunch of mythology and whose calendrical systems were in any case very different, saw nothing to worry about,

and they were right. The other significant difference is that the new crisis involves computers instead of theological theory. The objective reality of such firstmillennium concepts as angels, Satan, and Jesus Christ remains very much open to debate. But regardless of your religious beliefs or the calendar you follow, you use a computer geared to the Christian calendrical system today, whether you live in Timbuktu, Uzbek-istan, Tierra del Fuego, or the far Yukon, And there's no question at all that a lot of currently functioning computer software is incapable of dealing properly with dates that begin with the number "2," and is likely to read references to the year 2000 as though the year 1900 had been intended. The confusion that that will cause in some quarters will be irritating at the very least, and might,

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if we are to believe the most extreme of our modern apocalyptists, cast us into such chaos that our entire civilization will come crashing down.

We are offered a smorgasbord of grim forecasts for the upcoming New Year's Eve divertissement. They range from the relatively trivial (government checks delayed; automatic teller machines refusing to disgorge \$20 bills) to the moderately troublesome (computer-controlly worldwide financial dealings paralyzed) to the splendidly spine-chilling (complete loss of electrical power everywhere; stockpiled nucleararmed missiles accidentally firing themselves).

This modern millenarian paranoia is odd stuff. Some strange bedfellows are involved in it. On the one hand, we have a bunch of Bible-toting Christian fundamentalists who believe that all hell is due to break loose in the most literal way on January 1, 2000. On the other, we have a contingent of New Age spiritualists who have no truck with apocalyptic Biblical prophecy but detest the modern technological world as soulless and heartless, and who are looking forward gleefully to the coming catastrophe in the hope that a new and better society can be built upon the ruins of the old evil one. So we have radio evangelist Noah

So we have radio evangelist Noah Hutchins broadcasting nationwide out of Oklahoma City to tell us that Jesus will soon be among us. He's the author of a book called Y2K-66 that equates giant computers, electronic banking, bar codes, and computerized mailing lists with the Antichrist, (Revelation 13 tells us, "that had the natich rist, or the name of the beast (the Antichrist) or the number of his name," and goes no to say, "Let him that hath understanding count the number of the beast: for it

is the number of a man; and his number is Six hundred threescore and six.") The collapse of our computers will set free the Antichrist, Hutchins implies, and that will lead to the return of Jesus and the final battle between good and evil at Armageddon.

Then there's evangelist Pat Robertson, whose Christian Broadcast Network maintains a web site (!) devoted to apocalyptic Y2K forecasts. "God is alerting us that a big problem is coming," declares Robertson's technology editor, Drew Parkhill, although Parkhill hesitates to declare outright that the "end times" are nigh. So far, the Robertson group has focused mainly on how churches can help people cope with the power outages and food shortages that the Y2K breakdown might bring, and how Christians can employ the crisis to convert unbelievers to their faith. Larry Burkett, another Christian

fundamentalist who is more of an old-time survivalist, has a book out called Worldwide Collapse 2000. He has sold his suburban San Diego home and moved with four other families to a mountain farm somewhere in the Southwest, where he's holed up expecting the worst and prepared to cope. He's aware that a lot of people did the same thing, pointlessly, in the 1970s, and says, There's nothing more stupid than being stuck in the mountains with your gold and your guns, and nothing happens." But he's quite sure that something will, this time: not necessarily the second coming of Christ, but certainly disruption of food-distribution services and a world-wide depression. He's ready.

So is Tom Atlee of Berkeley, author of Awakening: The Upside of Y2K. His New Age web site is full of positive messages about the radical spiritual changes that will spread through the world once the global HEAR ALL NEW TALES OF FANTASY FROM THE GREATEST WRITERS OF OUR TIME.



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electronic monster self-destructs. Among the religious leaders Atlee likes to quote is Rabbi Zalman Shachter-Shalomi, whose sermons denounce computers for having led Americans away "from the simple ways of Earth" and the "natural order that God has promised us." And in Napa, Sonoma, and Santa Rosa, communities an hour's drive north of Berkeley, a band of survivalists is stockpiling vegetable seeds, canned food, portable energy generators, and supplies of water. "Some people might think we're a bit obsessed," said Cynthia Brush of Santa Rosa. She and her husband have organized a thirty-member Y2K survival group. "But we're not flaky people. We've got two feet on the ground, and we think deeply about the lifestyle we have. We're not interested in scaring people."

They have, however, scared the sober Federal Reserve Bank, which has ordered fifty billion dollars added to the nation's cash reserves in case people who fear the shutdown of banks and automatic tellers begin hoarding money. They have scared the Senate into organizing a Special Committee on the Year 2000 Technology Problem. They have scared a lot of other public officials who suddenly are blinking, looking around, demanding to know why nothing has been done.

"Am I overreacting? I don't know." said Brad Larsen, a Santa Rosa anesthetist. "It's only being responsible to have a plan and to prepare."

We live in the age of overreaction. though. No doubt that Y2K is going to cause a lot of trouble, despite the hundreds of millions of very real dollars being spent right now by corporate America to fix very real software glitches.

I myself take a basically skeptical position about the extent of the problem. Some peculiar things will happen as the new digit rolls into view. ves. But my bet is that we'll come out the far side in fine shape, just as we did a thousand years ago. The Antichrist will not appear, angels will not be seen battling demons in the sky, the kilowatts will continue to flow, and the banks will open right on schedule after the holiday. Or am I being naively optimistic? We'll all find out next New Year's Day, O.

THE POSSIBILITY OF LOVE ON MARS

to end a broken heart.

Someone leaping, for example, from the steep cliffs of Olympus Mons would accelerate at 38 percent of our familiar 9.8 meters per second per second. but reach a terminal velocity much greater than here on Earth. more than enough

-David Sandner

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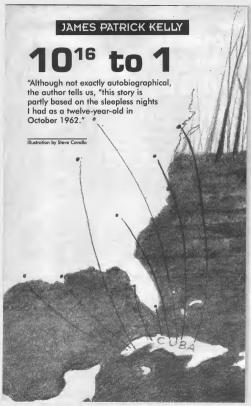
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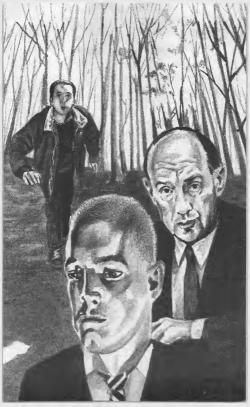
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But the best evidence we have that time travel is not possible, and never will be, is that we have not been invaded by hordes of tourists from the future.
—Stephen Hawking, "The Future of the Universe"

remember now how lonely I was when I met Cross. I never let anyone know about it, because being alone back then didn't make me quite so unhappy. Besides, I was just a kid. I thought it was my own fault.

It looked like I had friends. In 1962, I was on the swim team and got elected Assistant Patrol Leader of the Wolf Patrol in Boy Sout Troop 7. When sides got chosen for kickball at recess, I was usually the fourth or fifth pick. I wasn't the best student in the sixth grade of John Jay Elementary School—that was Betty Garolli. But I was smart and the other kids made me feel bad about it. So I stopped raising my hand when I knew the answer and I watched my occabulary. I remember I said albeit once in class and they teased me for weeks. Packs of girls would come up to me on the playground. "Oh, Ray," they'd call and when I turned around they'd scream, "All best it" and run away, choking with laughter.

It wasn't that I wanted to be popular or anything. All I really wanted was a friend, one friend, a friend I didn't have to hide anything from. Then came

Cross, and that was the end of that.

One of the problems was that we lived so far away from everything. Back then, Westchester County wann't so suburban. Our house was deep in the woods in tiny Willoughby, New York, at the dead end of Cobb's Hill Road. In the winter, we could see Long island Sound, a silver needle on the horizon pointing toward the city, But school was a half hour drive away and the nearest kid lived in Ward's Hollow, three miles down the road, and he was

a dumb fourth-grader.

So I didn't have any real friends. Instead, I had science fiction. Mom used to complain that I was obsessed. I watched Superman reruns every day after exhool. On Friday nights, Dad had let me stay up for Twilight Zone, but that fall CBS had temporarily canceled it. It came back in January after everything happened, but was never quite the same. On Saturdays, I watched old sci-fi movies on Adventure Theater. My favorites were Porbidden Planet and The Day The Earth Stood Still. I think it was because of the robots. I decided that when I grew up and it was the future, I was going to buy one, so I wouldn't have to be alone anymore.

On Monday mornings, I'd get my weekly allowance—a quarter. Usually I'd get off the bus that same afternoon down in Ward's Hollow so I could go to Village Variety. Twenty-five cents bought two comies and a pack of red licorice. I especially loved DCs Green Lonten, Marvel's Fantastic Four and Incredible Hulk, but I'd buy almost any superhero. I read all the science fiction books in the library twice, even though Mom kept nagging me to try different things. But what I loved best of all was Galazy magazine. Dad had a subscription, and when he was done reading them, he would slip them to me. Mom didn't approve. I always used to read them up in the attic or out in the lean-to I'd lashed together in the woods. Afterward, I'd store them under my bunk in the bomb shelter. I knew that after the nuclear war, there would be no I'V or radio or anything and I'd need something to keep me

busy when I wasn't fighting mutants.

I was too young in 1962 to understand about Mom's drinking. I could see that she got bright and wobbly at night, but she was always up in the morning to make me a hot breakfast before school. And she would have graham

crackers and peanut butter waiting when I came home—sometimes cinnamon toast. Dad said I shouldn't ask Mom for rides after five because she got so tired keeping house for us. He sold Andersen windows and was away a lot, so I was pretty much stranded most of the time. But he always made a point of being home on the first Tuesday of the month, so he could take me to the Scout meeting at 7.30.

No, looking back on it, I can't really say that I had an unhappy childhood—until I met Cross.

nood—until i met Cros

I remember it was a warm Saturday afternoon in October. The leaves covering the ground were still crisp and their scent spiced the air. I was in the lean-to I'd built that spring, mostly to practice the square and diagonal lashings I needed for Scouts. I was reading Goday, I even remember the story: The Ballad of Lost C'Mell' by Cordwainer Smith. The squirrels must have been chittering for some time, but I was too engrossed by Lord Jestocost's problems to notice. Then I heard a faint crunch, not ten feet away. I froze, listening, Crunch, crunch . . . then silence. It could be been a dog, except that dogs didn't usually slink through the woods. I was hoping it might be a deer—I'd never seen deer in Willoughby before, although I'd heard hunters shooting. I scooted silently across the dirt floor and peered between the dead saphings.

the dead sapings.

At first I couldn't see anything, which was odd. The woods weren't all that thick and the leaves had long since dropped from the understory brush. I wondered if I had imagined the sounds; it wouldn't have been the first time. Then I heard a twig snap, maybe a foot away. The wall shivered as if something had brushed against it, but there was nothing there. Nothing. I might have screamed then, except my throat started to close. I heard whatever it was skulk to the front of the learn-to. I watched in horror as an unseen weight pressed an acorn into the soft earth, and then I scrambled back into the farthest corner. That's when I noticed that, when I wasn't looking directly at it, the air where the invisible thing should have been shimmered like a mirage. The lashings that held the frame creaked, as if it were bending over to see what it had caught, getting ready to drag me, squealing, out into the sun and . . .

"Oh, fuck," it said in a high, panicky voice and then it thrashed away into

the woods.

In that moment, I was transformed—and I suppose that history too was forever changed. I had somehow scared the thing off, twelve-year-old scrawny me! But more important was what it had said. Certainly I was well aware of the existence of the word fuck before then, but I had never dared use it myself, nor do I remember hearing it spoken by an adult. A spaz like the Murphy kid might say it under his breath, but he hardly counted. I dal ways thought of it as language's atomic bomb; used properly, the word should make brains shrivel, eardrums explode. But when the invisible thing said fuck and then ran away, it betrayed a vulnerability that made me reckless and more than a little stupid.

"Hey, stop!" I took off in pursuit.

I didn't have any trouble chasing it. The thing was no Davy Crockett; it was noisy and clumsy and slow. I could see a flickery outline as it lumbered along. I closed to within twenty feet and then had to hold back or I would've caught up to it. I had no idea what to do next. We blundered on in slower and slower motion until finally I just stooped.

"W-wait," I called. "W-what do you want?" I put my hands on my waist and bent over like I was trying to catch my breath, although I didn't need to.

The thing stopped too, but didn't reply. Instead it sucked air in wheezy, ragged hooofs. It was harder to see, now that it was standing still, but I think it must have turned toward me.

"Are you okay?" I said.

"You are a child." It spoke with an odd, chirping kind of accent. "Child" was Ch-eve-eld.

"I'm in the sixth grade." I straightened, spread my hands in front of me to show that I wasn't a threat, "What's your name?" It didn't answer. I took a step toward it and waited. Still nothing, but at least it didn't bolt, "I'm Ray Beaumont," I said finally. "I live over there." I pointed. "How come I

"What is the date?" It said da-ate-eh.

For a moment, I thought it meant data. Data? I puzzled over an answer, I didn't want it thinking I was just a stupid little kid. "I don't know," I said cautiously. "October twentieth?"

The thing considered this, then asked a question that took my breath

away. "And what is the year?" "Oh jeez," I said. At that point, I wouldn't have been surprised if Rod Serling himself had popped out from behind a tree and started addressing the

unseen TV audience. Which might have included me, except this was really happening. "Do you know what you just . . . what it means when . . . " "What, what?" Its voice rose in alarm.

"You're invisible and you don't know what year it is? Everyone knows what year it is! Are you . . . you're not from here.'

"Yes, ves. I am. 1962, of course. This is 1962." It paused. "And I am not invisible." It squeezed about eight syllables into "invisible." I heard a sound like paper ripping, "This is only camel," Or at least, that's what I thought it said.

"Camel?"

14

"No, camo." The air in front of me crinkled and slid away from a dark face. "You have not heard of camouflage?"

"Oh sure, camo,"

I suppose the thing meant to reassure me by showing itself, but the effect was just the opposite. Yes, it had two eyes, a nose, and a mouth. It stripped off the camouflage to reveal a neatly pressed gray three-piece business suit, a white shirt, and a red-and-blue striped tie. At night, on a crowded street in Manhattan, I might've passed it right by-Dad had taught me not to stare at the kooks in the city. But in the afternoon light, I could see all the things wrong with its disguise. The hair, for example, Not exactly a crewcut, it was more of a stubble, like Mr. Rudowski's chin when he was growing his beard. The thing was way too thin, its skin was shiny, its fingers too long, and its face—it looked like one of those Barbie dolls.

"Are you a boy or a girl?" I said.

It started. "There is something wrong?"

I cocked my head to one side. "I think maybe it's your eyes. They're too big

or something. Are you wearing makeup?" "I am naturally male." It-he bristled as he stepped out of the camouflage

suit, "Eyes do not have gender."

"If you say so." I could see he was going to need help getting around, only

he didn't seem to know it. I was hoping he'd reveal himself, brief me on the mission. I even had an idea how we could contact President Kennedy or whoever he needed to meet with, Mr. Newell, the Scoutmaster, used to be a colonel in the Army-he would know some general who could call the Pentagon, "What's your name?" I said. He draped the suit over his arm, "Cross."

I waited for the rest of it as he folded the suit in half, "Just Cross?" I said.

"My given name is Chitmansing." He warbled it like he was calling birds. "That's okay," I said, "Let's just make it Mr. Cross," "As you wish, Mr. Beaumont." He folded the suit again, again, and again.

"Hev!"

He continued to fold it.

"How do you do that? Can I see?"

He handed it over. The camo suit was more impossible than it had been when it was invisible. He had reduced it to a six-inch-square card, as thin and flexible as the queen of spades. I folded it in half myself. The two sides seemed to meld together; it would've fit into my wallet perfectly. I wondered if Cross knew how close I was to running off with his amazing gizmo. He'd never catch me. I could see flashes of my brilliant career as the invisible superhero. Tales to Confound presents: the origin of Camo Kid! I turned the card over and over, trying to figure out how to unfold it again. There was no seam, no latch. How could I use it if I couldn't open it? "Neat," I said. Reluctantly, I gave the card back to him.

Besides, real superheroes didn't steal their powers.

I watched Cross slip the card into his vest pocket. I wasn't scared of him. What scared me was that at any minute he might walk out of my life. I had

to find a way to tell him I was on his side, whatever that was.

"So you live around here, Mr. Cross?" "I am from the island of Mauritius."

"Where's that?"

"It is in the Indian Ocean, Mr. Beaumont, near Madagascar."

I knew where Madagascar was from playing Risk, so I told him that, but then I couldn't think of what else to say. Finally, I had to blurt out something-anything-to fill the silence. "It's nice here. Real quiet, you know. Private.

"Yes, I had not expected to meet anyone." He, too, seemed at a loss. "I

have business in New York City on the twenty-sixth of October."

"New York, that's a ways away."

"Is it? How far would you say?"

"Fifty miles, Sixty, maybe, You have a car?"

"No, I do not drive, Mr. Beaumont. I am to take the train."

The nearest train station was New Canaan, Connecticut, I could've hiked it in maybe half a day. It would be dark in a couple of hours. "If your busi-

ness isn't until the twenty-sixth, you'll need a place to stay." "The plan is to take rooms at a hotel in Manhattan."

"That costs money."

He opened a wallet and showed me a wad of crisp new bills. For a minute I thought they must be counterfeit; I hadn't realized that Ben Franklin's picture was on any money. Cross was giving me the goofiest grin. I just knew they'd eat him alive in New York and spit out the bones. "Are you sure you want to stay in a hotel?" I said.

He frowned. "Why would I not?"

"Look, you need a friend, Mr. Cross. Things are different here than . . . than on your island. Sometimes people do, you know, bad stuff, Especially in the city."

He nodded and put his wallet away. "I am aware of the dangers, Mr. Beaumont. I have trained not to draw attention to myself. I have the prop-

er equipment." He tapped the pocket where the camo was, I didn't point out to him that all his training and equipment hadn't kept him from being caught out by a twelve-year-old. "Sure, okay. It's just . . . look, I have a place for you to stay, if you want. No one will know.'

"Your parents, Mr. Beaumont. . . .

"My dad's in Massachusetts until next Friday. He travels; he's in the window business. And my mom won't know."

"How can she not know that you have invited a stranger into your house?"

"Not the house," I said, "My dad built us a bomb shelter. You'll be safe there, Mr. Cross. It's the safest place I know."

I remember how Cross seemed to lose interest in me, his mission, and the entire twentieth century the moment he entered the shelter. He sat around all of Sunday, dodging my attempts to draw him out. He seemed distracted, like he was listening to a conversation I couldn't hear. When he wouldn't talk, we played games. At first it was cards: Gin and Crazy Eights, mostly. In the afternoon, I went back to the house and brought over checkers and Monopoly. Despite the fact that he did not seem to be paying much attention, he beat me like a drum. Not one game was even close. But that wasn't what bothered me. I believed that this man had come from the future, and here I was building hotels on Baltic Avenue!

Monday was a school day. I thought Cross would object to my plan of locking him in and taking both my key and Mom's key with me, but he never said a word. I told him that it was the only way I could be sure that Mom didn't catch him by surprise. Actually, I doubted she'd come all the way out to the shelter. She'd stayed away after Dad gave her that first tour; she had about as much use for nuclear war as she had for science fiction. Still, I had no idea what she did during the day while I was gone. I couldn't take chances. Besides, it was a good way to make sure that Cross didn't skin out on me.

Dad had built the shelter instead of taking a vacation in 1960, the year Kennedy beat Nixon. It was buried about a hundred and fifty feet from the house. Nothing special—just a little cellar without anything built on top of it. The entrance was a steel bulkhead that led down five steps to another steel door. The inside was cramped; there were a couple of cots, a sink, and a toilet. Almost half of the space was filled with supplies and equipment. There were no windows and it always smelled a little musty, but I loved going down there to pretend the bombs were falling.

When I opened the shelter door after school on that Monday, Cross lay just as I had left him the night before, sprawled across the big cot, staring at nothing. I remember being a little worried; I thought he might be sick. I

stood beside him and still he didn't acknowledge my presence.

"Are you all right, Mr. Cross?" I said, "I brought Risk," I set it next to him on the bed and nudged him with the corner of the box to wake him up, "Did you eat?"

He sat up, took the cover off the game and started reading the rules.

"President Kennedy will address the nation," he said, "this evening at seven o'clock.'

For a moment, I thought he had made a slip, "How do you know that?" "The announcement came last night." I realized that his pronunciation

had improved a lot; announcement had only three syllables. "I have been

studying the radio. I walked over to the radio on the shelf next to the sink. Dad said we were supposed to leave it unplugged-something about the bombs making a power surge. It was a brand new solid-state, multi-band Heathkit that I'd helped him build. When I pressed the on button, women immediately started singing about shopping: Where the values go up, up, up! And the prices go down, down, down! I turned it off again.

"Do me a favor, okay?" I said. "Next time when you're done would you please unplug this? I could get in trouble if you don't." I stooped to vank the

plug.

When I stood up, he was holding a sheet of paper. "I will need some things tomorrow, Mr. Beaumont, I would be grateful if you could assist me." I glanced at the list without comprehension. He must have typed it, only there was no typewriter in the shelter.

To buy:

—One General Electric transistor radio with earplug

—One General Electric replacement earplug

—Two Eveready Heavy Duty nine volt batteries

—One New York Times, Tuesday, October 23

-Rand McNally map of New York City and vicinity To receive in coins:

-twenty nickels -ten dimes

-twelve quarters

When I looked up, I could feel the change in him. His gaze was electric; it seemed to crackle down my nerves. I could tell that what I did next would matter very much. "I don't get it." I said. "There are inaccuracies?"

I tried to stall, "Look, you'll pay almost double if we buy a transistor radio at Ward's Hollow. I'll have to buy it at Village Variety. Wait a couple of days-we can get one much cheaper down in Stamford.

'My need is immediate." He extended his hand and tucked something into the pocket of my shirt. "I am assured this will cover the expense."

I was afraid to look, even though I knew what it was. He'd given me a hundred dollar bill. I tried to thrust it back at him but he stepped away and

it spun to the floor between us, "I can't spend that,"

"You must read your own money, Mr. Beaumont," He picked the bill up and brought it into the light of the bare bulb on the ceiling, "This note is legal tender for all debts public and private." "No, no, you don't understand. A kid like me doesn't walk into Village Va-

riety with a hundred bucks. Mr. Rudowski will call my mom!"

"If it is inconvenient for you, I will secure the items myself." He offered

me the money again.

If I didn't agree, he'd leave and probably never come back. I was getting mad at him. Everything would be so much easier if only he'd admit what we both knew about who he was. Then I could do whatever he wanted with a clear conscience. Instead, he was keeping all the wrong secrets and acting really weird. It made me feel dirty, like I was helping a pervert. "What's going on?" I said.

"I do not know how to respond, Mr. Beaumont. You have the list. Read it now and tell me please with which item you have a problem."

I snatched the hundred dollars from him and jammed it into my pants

pocket, "Why don't you trust me?" He stiffened as if I had hit him.

'I let you stay here. I didn't tell anyone. You have to give me something. Mr. Cross."

"Well then . . ." He looked uncomfortable. "I would ask you to keep the

change.

"Oh jeez, thanks." I snorted in disgust. "Okay, okay, I'll buy this stuff

right after school tomorrow."

With that, he seemed to lose interest again. When we opened the Risk board, he showed me where his island was, except it wasn't there because it was too small. We played three games and he crushed me every time. I remember at the end of the last game, watching in disbelief as he finished building a wall of invading armies along the shores of North Africa, South America, my last continent, was doomed. "Looks like you win again," I said. I traded in the last of my cards for new armies and launched a final, use-

less counter-attack. When I was done, he studied the board for a moment. "I think Risk is not a proper simulation, Mr. Beaumont, We should both

lose for fighting such a war."

"That's crazy," I said. "Both sides can't lose."

"Yet they can," he said. "It sometimes happens that the victors envy the dead."

That night was the first time I can remember being bothered by Mom talking back to the TV. I used to talk to the TV too. When Buffalo Bob asked what time it was, I would screech It's Howdy Doody Time, just like every other kid in America.

"My fellow citizens," said President Kennedy, "let no one doubt that this is a difficult and dangerous effort on which we have set out." I thought the president looked tired, like Mr. Newell on the third day of a camp-out, "No one can foresee precisely what course it will take or what costs or casualties will be incurred."

"Oh my god!" Mom screamed at him. "You're going to kill us all!"

Despite the fact that it was close to her bedtime and she was shouting at the President of the United States, Mom looked great. She was wearing a shiny black dress and a string of pearls. She always got dressed up at night, whether Dad was home or not. I suppose most kids don't notice how their mothers look, but everyone always said how beautiful Mom was. And since Dad thought so too, I went along with it-as long as she didn't open her mouth. The problem was that a lot of the time, Mom didn't make any sense. When she embarrassed me, it didn't matter how pretty she was. I just

wanted to crawl behind the couch.

"Mom!"

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As she leaned toward the television, the martini in her glass came close to slopping over the edge.

President Kennedy stayed calm. "The path we have chosen for the pre-

sent is full of hazards, as all paths are-but it is the one most consistent with our character and courage as a nation and our commitments around the world. The cost of freedom is always high-but Americans have always paid it. And one path we shall never choose, and that is the path of surrender or submission." "Shut up! You foolish man, stop this!" She shot out of her chair and then

some of her drink did spill. "Oh, damn!"

"Take it easy, Mom."

"Don't you understand?" She put the glass down and tore a Kleenex from the box on the end table. "He wants to start World War III!" She dabbed at the front of her dress and the phone rang.

I said, "Mom, nobody wants World War III."

She ignored me, brushed by, and picked up the phone on the third ring. "Oh, thank God," she said. I could tell from the sound of her voice that it

was Dad. "You heard him then?" She bit her lip as she listened to him. "Yes, but . . .' Watching her face made me sorry I was in the sixth grade. Better to be a

stupid little kid again, who thought grownups knew everything. I wondered

whether Cross had heard the speech. "No, I can't, Dave. No." She covered the phone with her hand. "Raymie,

turn off that TV!"

I hated it when she called me Raymie, so I only turned the sound down. "You have to come home now, Dave. No, you listen to me. Can't you see, the man's obsessed? Just because he has a grudge against Castro doesn't mean he's allowed to . . ."

With the sound off, Chet Huntley looked as if he were speaking at his own funeral.

"I am not going in there without you."

I think Dad must have been shouting because Mom held the receiver away from her ear.

She waited for him to calm down and said, "And neither is Raymie, He'll

stay with me."

"Let me talk to him," I said, I bounced off the couch. The look she gave me stopped me dead. "What for?" she said to Dad. "No, we are going to finish this conversation,

David, do you hear me?"

She listened for a moment, "Okay, all right, but don't you dare hang up," She waved me over and slapped the phone into my hand as if I had put the

missiles in Cuba. She stalked to the kitchen.

I needed a grownup so bad that I almost cried when I heard Dad's voice. "Ray," he said, "your mother is pretty upset."

"Yes." I said.

"I want to come home—I will come home—but I can't just yet. If I just up and leave and this blows over, I'll get fired,"

"But, Dad . .

"You're in charge until I get there. Understand, son? If the time comes, everything is up to you.

"Yes, sir." I whispered. I'd heard what he didn't say-it wasn't up to her. "I want you to go out to the shelter tonight. Wait until she goes to sleep. Top off the water drums. Get all the gas out of the garage and store it next

to the generator. But here's the most important thing. You know the sacks of rice? Drag them off to one side, the pallet too. There's a hatch underneath, the key to the airlock door unlocks it. You've got two new guns and plenty of ammunition. The revolver is a .357 Magnum. You be careful with that, Ray, it can blow a hole in a car but it's hard to aim. The double-barreled shotgun is easy to aim but you have to be close to do any harm. And I want you to bring down the Gamemaster from my closet and the .38 from my dresser drawer." He had been talking as if there would be no tomorrow; he paused then to catch his breath, "Now, this is all just in case, okay? I just want you to know."

I had never been so scared in my life. "Ray?"

I should have told him about Cross then, but Mom weaved into the room,

"Got it, Dad," I said, "Here she is." Mom smiled at me. It was a lopsided smile that was trying to be brave but wasn't doing a very good job of it. She had a new glass and it was full. She held out her hand for the phone and I gave it to her.

I remember waiting until almost ten o'clock that night, reading under the covers with a flashlight. The Fantastic Four invaded Latveria to defeat Doctor Doom: Superman tricked Mr. Mxvzptlk into saving his name backward once again. When I opened the door to my parents' bedroom, I could hear Mom snoring. It spooked me: I hadn't realized that women did that. I thought about sneaking in to get the guns, but decided to take care of them

I stole out to the shelter, turned my key in the lock and pulled on the bulkhead door. It didn't move. That didn't make any sense, so I gave it a hard yank. The steel door rattled terribly but did not swing away. The air had turned frosty and the sound carried in the cold. I held my breath, listening to my blood pound. The house stayed dark, the shelter quiet as stones. After a few moments, I tried one last time before I admitted to myself what had happened.

Cross had bolted the door shut from the inside.

I went back to my room, but couldn't sleep. I kept going to the window to watch the sky over New York, waiting for a flash of killing light. I was all but convinced that the city would burn that very night in thermonuclear fire and that mom and I would die horrible deaths soon after, pounding on the unvielding steel doors of our shelter. Dad had left me in charge and I had let him down.

I didn't understand why Cross had locked us out. If he knew that a nuclear war was about to start, he might want our shelter all to himself. But that made him a monster and I still didn't see him as a monster. I tried to tell myself that he'd been asleep and couldn't hear me at the door-but that couldn't be right. What if he'd come to prevent the war? He'd said he had business in the city on Thursday; he could be doing something really, really futuristic in there that he couldn't let me see. Or else he was having problems. Maybe our twentieth century germs had got to him, like they killed H. G. Wells's Martians.

I must have teased a hundred different ideas apart that night, in between uneasy trips to the window and glimpses at the clock. The last time I remember seeing was quarter after four. I tried to stay up to face the end, but I couldn't.

James Patrick Kelly

I wasn't dead when I woke up the next morning, so I had to go to school. Mom had Cream of Whest all ready when I dragged myself to the table. Alt though she was all bright and bubbly, I could feel her giving me the mother's eye when I wasn't looking. She always knew when something was wrong. I tried not to show her anything. There was no time to sneak out to the shelter; I barely had time to finish eating before she bundled me off to the bus.

Right after the morning bell, Miss Toohey told us to open The Story of New York State to Chapter Seven, "Resources and Products," and read to ourselves. Then she left the room. We looked at each other in amazement. I heard Bobby Coniff whisper something. It was probably dirty, a few kids snickered. Chapter Seven started with a map of product symbols. Two teen yl little cows grazed near Binghamton. Rochester was a cog and a pair of glasses. Ellnira was an adding machine, Oswego an apple. There was a lightning bolt over Niagara Falls. Dad had promised to take us there someday. I had the sick feeling that we'd never get the chance. Miss Toohey looked pale when she came back, but that didn't stop her from giving us a spelling test. I got a ninety-free. The word I spelled wrong was enigma. The hot lunch was American Chop Suey, a roll, a salad, and a bowl of butter-sootch pudding. In the afternoon, we did decimals.

Nobody said anything about the end of the world.

I decided to get off the bus in Ward's Hollow, buy the stuff Cross wanted and pretend I didn't know he had locked the shelter door last night. If he said something about it, I'd act surprised. If he didn't . . . I didn't know what I'd do then.

Tillage Variety was next to Warren's Esso and across the street from the Post Office. It had once been two different stores located in the same building, but them Mr. Rudowski had bought the building and knocked down the dividing wall. On the fun side were pens and pencils and paper and greeting cards and magazines and comics and paperbacks and candy. The other

ing cards and magazines and comics and paperbacks and candy. The other side was all boring hardware and small appliances. Mr. Rudowski was on the phone when I came in, but then he was always on the phone when he worked. He could sell you a hammer or a pack of baseball cards, tell you a joke, ask about your family, complain about the weather and still keep the guvon the other end of the line happy. This time

though, when he saw me come in, he turned away, wrapping the phone cord

across his shoulder.

I went through the store quickly and found everything Cross had wanted. I had to blow dust off the transistor radio box but the batteries looked
fresh. There was only one New York Times left; the headlines were so big
they were scary.

US IMPOSES ARMS BLOCKADE ON CUBA ON FINDING OF OFFENSIVE MISSILE SITES; KENNEDY READY FOR SOVIET SHOWDOWN Ships Must Stop President Grave Prepared To Risk War.

I set my purchases on the counter in front of Mr. Rudowski. He cocked his head to one side, trapping the telephone receiver against his shoulder, and rang me up. The paper was on the bottom of the pile.

"Since when do you read the Times, Ray?" Mr. Rudowski punched it into

the cash register and hit total. "I just got the new Fantastic Four." The cash drawer popped open.

"Maybe tomorrow," I said.

"All right then. It comes to twelve dollars and forty-seven cents."

I gave him the hundred dollar bill. "What is this, Ray?" He stared at it and then at me.

I had my story all ready. "It was a birthday gift from my grandma in Detroit. She said I could spend it on whatever I wanted so I decided to treat myself, but I'm going to put the rest in the bank."

'You're buying a radio? From me?" "Well, you know, I thought maybe I should have one with me with all this

stuff going on.

He didn't say anything for a moment. He just pulled a paper bag from under the counter and put my things into it. His shoulders were hunched; I thought maybe he felt guilty about overcharging for the radio. "You should be listening to music, Ray," he said quietly. "You like Elvis? All kids like

Elvis. Or maybe that colored guy, the one who does the Twist?" "They're all right, I guess."

"You're too young to be worrying about the news. You hear me? Those politicians . . ." He shook his head. "It's going to be okay, Ray. You heard it from me."

"Sure, Mr. Rudowski. I was wondering, could I get five dollars in change?"

I could feel him watching me as I stuffed it all into my book bag. I was

certain he'd call my mom, but he never did. Home was three miles up Cobb's Hill. I did it in forty minutes, a record.

I remember I started running when I saw the flashing lights. The police car had left skid marks in the gravel on our driveway. "Where were you?" Mom burst out of the house as I came across the lawn.

"Oh, my God, Raymie, I was worried sick." She caught me up in her arms. "I got off the bus in Ward's Hollow," She was about to smother me: I squirmed free. "What happened?"

This the boy, ma'am?" The state trooper had taken his time catching up to her. He had almost the same hat as Scoutmaster Newell.

"Yes, yes! Oh, thank God, officer!"

The trooper patted me on the head like I was a lost dog, "You had your mom worried, Ray."

"Raymie, you should've told me."

"Somebody tell me what happened!" I said.

A second trooper came from behind the house. We watched him approach. "No sign of any intruder." He looked bored: I wanted to scream. "Intruder?" I said.

"He broke into the shelter," said Mom. "He knew my name."

"There was no sign of forcible entry," said the second trooper. I saw him exchange a glance with his partner. "Nothing disturbed that I could see."
"He didn't have time," Mom said. "When I found him in the shelter, I ran

back to the house and got your father's gun from the bedroom."

The thought of Mom with the .38 scared me. I had my Shooting merit badge, but she didn't know a hammer from a trigger. "You didn't shoot him?" "No." She shook her head. "He had plenty of time to leave but he was still there when I came back. That's when he said my name."

I had never been so mad at her before. "You never go out to the shelter." She had that puzzled look she always gets at night. "I couldn't find my

key. I had to use the one your father leaves over the breezeway door." "What did he say again, ma'am? The intruder."

"He said, 'Mrs. Beaumont, I present no danger to you,' And I said, 'Who

are you?' And then he came toward me and I thought he said 'Margaret,' and I started firing. "You did shoot him!"

Both troopers must have heard the panic in my voice. The first one said. "You know something about this man, Ray?

"No, I-I was at school all day and then I stopped at Rudowski's . . . " I could feel my eyes burning. I was so embarrassed; I knew I was about to cry in front of them. Mom acted annoyed that the troopers had stopped paying attention to

her. "I shot at him. Three, four times, I don't know, I must have missed, because he just stood there staring at me. It seemed like forever. Then he walked past me and up the stairs like nothing had happened." "And he didn't say anything?"

"Not a word."

"Well, it beats me," said the second trooper. "The gun's been fired four times but there are no bullet holes in the shelter and no bloodstains."

"You mind if I ask you a personal question, Mrs. Beaumont?" the first trooper said.

She colored. "I suppose not."

"Have you been drinking, ma'am?"

"Oh that!" She seemed relieved. "No. Well, I mean, after I called you, I did pour myself a little something. Just to steady my nerves. I was worried because my son was so late and . . . Raymie, what's the matter?"

I felt so small. The tears were pouring down my face.

After the troopers left, I remember Mom baking brownies while I watched Superman. I wanted to go out and hunt for Cross, but it was already sunset and there was no excuse I could come up with for wandering around in the dark. Besides, what was the point? He was gone, driven off by my mother. I'd had a chance to help a man from the future change history, maybe prevent World War III, and I had blown it. My life was ashes.

I wasn't hungry that night, for brownies or spaghetti or anything, but Mom made that clucking noise when I pushed supper around the plate, so I ate a few bites just to shut her up. I was surprised at how easy it was to hate her, how good it felt. Of course, she was oblivious, but in the morning she would notice if I wasn't careful. After dinner, she watched the news and I went upstairs to read, I wrapped a pillow around my head when she velled at David Brinkley. I turned out the lights at 8:30, but I couldn't get to sleep. She went to her room a little after that.

"Mr. Beaumont?" I must have dozed off, but when I heard his voice I snapped awake imme-

diately.

"Is that you, Mr. Cross?" I peered into the darkness. "I bought the stuff you wanted." The room filled with an awful stink, like when Mom drove with the parking brake on.

"Mr. Beaumont," he said, "I am damaged."

I slipped out of bed, picked my way across the dark room, locked the door and turned on the light.

"Oh jeez!"

He slumped against my desk like a nightmare. I remember thinking then that Cross want' human, that maybe he wasn't even alive. His proportions were wrong: an ear, a shoulder and both feet sagged like they had melted. Little wisps of steam or something curled off him; they were what smelled. His skin had gone all shiny and hard; so had his business suit. Id wondered why he never took the suit cost off, and now I knew. His clothes were part of him. The middle fingers of his right hand beat spasmodically against his salm.

"Mr. Beaumont," he said. "I calculate your chances at 1016 to 1."

"Chances of what?" I said. "What happened to you?"

"You must listen most attentively, Mr. Beaumont. My decline is very bad for history. It is for you now to alter the time-line probabilities."

"I don't understand."
"Your government greatly overestimates the nuclear capability of the Soviet Union. If you originate a first strike, the United States will achieve

overwhelming victory."

"Does the president know this? We have to tell him!"
"John Kennedy will not welcome such information. If he starts this war, he will be responsible for the deaths of tens of millions, both Russians and Americans. But he does not grasp the future of the arms race. The war must happen now, because those who come after will build and build until they control arsenals that can destroy the world many times over. People are not capable of thinking for very long of such fearsome weapons. They tire of the idea of extinction and then become numb to it. The buildup slows but does not stop and they congratulate themselves on having survived it. But there are still too many weapons and they never go away. The Third War comes as a surprise. The First War was called the one to end all wars. The Third War is the only such war possible. Mr. Beaumont, because it ends everything. History stops in 2009. Do you understand? A year later, there is no life. All dead, the world a hot. barren rock."

But you. . .

"I am nothing, a construct. Mr. Beaumont, please, the chances are 10¹⁶ to 1," he said. "Do you know how improbable that is?" His laugh sounded like a hiccup. "But for the sake of those few precious time lines, we must continue. There is a man, a politician in New York. If he dies on Thursday night, it will create the incident that forces Kennedy's hand."

"Dies?" For days, I had been desperate for him to talk. Now all I wanted

was to run away. "You're going to kill somebody?"

"The world will survive a Third War that starts on Friday, October 22, 1962."

"What about me? My parents? Do we survive?"

"I cannot access that time-line. I have no certain answer for you. Please, Mr. Beaumont, this politician will die of a heart attack in less than three years. He has made no great contribution to history, yet his assassination

can save the world."

"What do you want from me?" But I had already guessed.

"What do you want from me?" But I had already guessed.
"He will speak most eloquently at the United Nations on Friday evening.
Afterward he will have dinner with his friend, Ruth Fields. Around ten
o'clock he will return to his residence at the Waldorf Towers. Not the Wal-

dorf Astoria Hotel, but the Towers. He will take the elevator to Suite 42A. He is the American ambassador to the United Nations. His name is Adlai Stevenson."

"Stop it! Don't say anything else."

When he sighed, his breath was a cloud of acrid steam. "I have based my calculation of the time-line probabilities on two data points, Mr. Beaumont, which I discovered in your bomb shelter. The first is the .337 Magmun revolver, located under a pallet of rice bags. I trust you know of this weapon?" "Yes," I whispered.

"The second is the collection of magazines, located under your cot. It would seem that you take a interest in what is to come, Mr. Beaumont, and that may lend you the courage you will need to divert this time line from disaster. You should know that there is not just one future. There are an infinite number of futures in which all possibilities are expressed, an infinite number of Raymond Beaumonts."

"Mr. Cross, I can't. . . . "

"Perhaps not," he said, "but I believe that another one of you can."

"You don't understand..." I watched in horror as a boil swelled on the side of his face and popped, expelling an evil jet of yellow steam. "What?" "Oh fuck." That was the last thing he said.

On Jack. That was the last thing he said. He slid to the floor—or maybe he was just a body at that point. More boils formed and burst. I opened all the windows in my room and got the fan down out of the closet and still I can't believe that the stink didn't wake

Mom up. Over the course of the next few hours, he sort of vaporized. When it was over, there was a sticky, dark spot on the floor the size of my pillow. I moved the throw rug from one side of the room to the other to cover it up. I had nothing to prove that Cross existed but a transistor radio, accupile of batteries, an earplug, and eighty-seven dollars and fifty-three cents in change.

I might have done things differently if I hadr't had a day to think. I can't remember going to school on Wednesday, who I talked to, what I ate. I was fewerishly trying to figure out what to do and how to do it. I had no place to keer is the school of th

But that was too late.

I hid behind the stone wall when the school bus came on Thursday morning. Mrs. Johnson honked a couple of times, and then drove on. I set out for New Canaan, carrying my bookbag. In it were the radio, the batteries, the coins, the map of New York, and the .357. I had the rest of Cross's money in my wallet

It took more than five hours to hike to the train station. I expected to be scared, but the whole time I felt light as air. I kept thinking of what Cross had said about the future, that I was just one of millions and millions of Raymond Beaumonts. Most of them were in school, diagramming sentences and watching Miss Tookey bite her nails. I was the special one, walking into history. I was super. I causefut the 2-38 train channed in Stanford, and are

rived at Grand Central just after four. I had six hours. I bought myself a hot pretzel and a Coke and tried to decide where I should go. I couldn't just sit around the hotel lobby for all that time; I thought that would draw too much attention. I decided to go to the top of the Empire State Building. I took my time walking down Park Avenue and tried not to see all the ghosts I was about to make. In the lobby of the Empire State Building, I used Cross's change to call home.

"Hello?" I hadn't expected Dad to answer. I would've hung up except that

I knew I might never speak to him again.
"Dad, this is Ray. I'm safe, don't worry."

"Ray, where are you?"

"I can't talk. I'm safe but I won't be home tonight. Don't worry."
"Ray!" He was frantic. "What's going on?"

"I'm sorry."

"Ray!"

I hung up; I had to. "I love you," I said to the dial tone.

I could imagine the expression on Dad's face, how he would tell Mom what I'd said. Eventually they would argue about it. He would shout; she would cry. As I rode the elevator up. I get mad at them. He shouldn't have picked up the phone. They should've protected me from Cross and the future he came from. I was in the sixth grade, I shouldn't have to have feelings like this. The observation platform was almost deserted. I walked completely around it, staring at the city stretching away from me in every direction. It was dusk; the buildings were shadows in the failing light. I didn't feel like Ray Beaumont anymore, he was my secret identity. Now I was the superhero Bomb Boy; I had the power of bringing nuclear war. Wherever I cast my terrible gaze, cars melted and becople burst into flame.

And I loved it.

And 109ed it.
It was dark when I came down from the Empire State Building. I had a sausage pizza and a Coke on 47th Street. While I ate, I stuck the plug into my ear and listened to the radio. I searched for the news. One announcer said the debate was still going on in the Security Council. Our ambassador was questioning Ambassador Zorin. I stayed with that station for a while, hoping to hear his voice. I knew what he looked like, of course. Adlai Stevenson had run for president a couple of times when I was just a baby. But I couldn't remember what he sounded like. He might talk to me, ask me

what I was doing in his hotel; I wanted to be ready for that.

I arrived at the Waldorf Yowers around nine o'clock. I picked a plush
velvet chair that had a direct view of the elevator bank and sat there for
about ten minutes. Nobody seemed to care but it was hard to sit still. Firnally, I got up and went to the men's room. I took my bookbag into a stall,
cloced the door, and got the 357 out. I aimed it at the toilet. The gun was
heavy, and I could tell it would have a big kick. I probably ought to hold it
with both hands. I released the safety, put it back into my bookbag, and

flushed.

When I came out of the bathroom, I had stopped believing that I was going to shoot anyone, that I could. But I had to find out, for Cross's sake. If I was really meant to save the world, then I had to be in the right place at the right time. I went back to my chair, checked my watch. It was nine-twenty. Letward this light of the row who would will the trigger the upility Pow

I started thinking of the one who would pull the trigger, the unlikely Ray. What would make the difference? Had he read some story in Galaxy that I had skipped? Was it a problem with Mom? Or Dad? Maybe he had spelled

"enigma" right; maybe Cross had lived another thirty seconds in his time line. Or maybe he was just the best that I could possibly be.

I was so tired of it all. I must have walked thirty miles since morning and I hadn't slept well in days. The lobby was warm. People laughed and murmured. Elevator doors dinged softly. I tried to stay up to face history, but I couldn't. I was Raymond Beaumont, but I was just a twelve-year-old kid.

I remember the doorman waking me up at eleven o'clock. Dad drove all the way into the city to get me. When we got home, Mom was already in the shelter.

only the Third War didn't start that night. Or the next.

I lost television privileges for a month.

For most people my age, the most traumatic memory of growing up came on November 22, 1963. But the date I remember is July 14, 1965, when Adlai Stevenson dropped dead of a heart attack in London.

Tve tried to do what I can, to make up for what I didn't do that night. Tve worked for the cause wherever I could find it. I belong to CND and SANE and the Friends of the Earth, and was active in the nuclear freeze movement. I think the Green Party (www.greens.org) is the only political organization worth your yote. I don't know if any of it will change Cross's awful.

probabilities; maybe we'll survive in a few more time lines.

When I was a lid. I didn't mind being lonely. Now it's hard, knowing what I know. Oh, I have lots of friends, all of them wonderful people but people who know me say that there's a part of myself that I slways keep hidden. They're right. I don't think I'll were be able to tell anyone about what happened with Cross, what I didn't do that night. It wouldn't be fair to them.

nem.



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 Kim Stanley Robinson

SEXUAL DIMORPHISM

It's been over five years since we published our last story by Kim Stanley Robinson, "A Martian Childhood" (February 1994), and we are delighted to have him back. The paperback edition of Mr. Robinson's last novel, Antarctica, will be out from Bantam in July. Nearly fourteen years ago, we published our very first Kim Stanley Robinson tale, "Green Mars" (September 1985). Both it and our latest, "Sexual Dimorphism," will appear in The Martians, a collection of Mr. Robinson's short stories that will also be out soon from Bantam.



The potential for hallucination in paleogenomics was high. There was not only the omnipresent role of instrumentation in the envisioning of the ultramicroscopic fossil material, but also the metamorphosis over time of the material itself, both the DNA and its matrices, so that the data were invariably incomplete, and often shattered. Thus the possibility of psychological projection of patterns onto the rorschacherie of what in the end might be purely mineral processes had to be admitted.

The Andrew Smith was as aware of these possibilities as anyone. Indeed, it constituted one of the central problems of his field—convincingly to sort the traces of DNA in the fossil record, distinguishing them from an array of possible pseudofossils. Fseudofossils littered the history of the discipline, from the earliest false nautilioids to the famous Martian pseudo-nanobacteria. Nothing progressed in paleogenomics unless you could show that you really were talking about what you said you were talking about. So Dr. Smith did not get too excited, at first, about what he was finding in the junk DNA of an early dolphin fossil.

In any case there were quite a few distractions to his work at that time. He was living on the south shore of the Amazonian Sea, that deep southerly bay of the world-ringing ocean, east of Elysium, near the equator. In the property of the state of the

The marine laboratory he worked at, located on the seafront of the har-

bor town Eumenides Point, was associated with the Acheron labs, farther up the coast to the west. The work at Eumenides had mostly to do with the shifting ecologies of a sea that was getting saltier. Dr. Smith's current project dealing with this issue involved investigating the various adaptations of extinct cetaceans who had lived when the Earth's sea had exhibited different levels of salt. He had in his lab some fossil material, sent to the lab from Earth for study, as well as the voluminous literature on the subject, including the full genomes of all the living descendants of these creatures. The transfer of fossils from Earth introduced the matter of cosmic-ray contamination to all the other problems involved in the study of ancient DNA.

The transfer of fossils from Earth introduced the matter of cosmic-ray contamination to all the other problems involved in the study of ancient DNA, but most people dismissed these effects as minor and inconsequential, which was why fossils were shipped across at all. And of course with the recent deployment of fusion-powered rapid vehicles, the amount of exposure to cosmic rays had been markedly reduced. Smith was therefore able to do research on mammal salt tolerance both ancient and modern, thus helping to illuminate the current situation on Mars, also joining the debates ongoing concerning the paleohalocycles of the two planets, now one of the hot research areas in comparative planetology and bioengineering.

Nevertheless, it was a field of research so acrane that if you were not in-

Nevertneiess, it was a neito or research so arcane tankt it you were not involved in it, you tended not to believe in it. It was an offshoot, a mix of two difficult fields, its ultimate usefulness a long shot, especially compared to most of the inquiries being conducted at the Eumenides Point Labs. Smith found himself fighting a feeling of marginalization in the various lab meetings and informal gatherings, in coffee lounges, cocktail parties, beach luncheons, boating excursions. At all of these he was the odd man out, with only his colleague Frank Drumm, who worked on reproduction in the dolphins currently living offshore, expressing any great interest in his work and its applications. Worse yet, his work appeared to be becoming less and less important to his advisor and employer, Vlad Taneev, who as one of the First Hundred, and the co-founder of the Acheron labs, was ostensibly the most powerful scientific mentor one could have on Mars; but who in practice turned out to be nearly impossible of access, and rumored to be in failing health, so that it was like having no boss at all, and therefore no access to the lab's technical staff and so forth. A bitter disappointment.

And then of course there was Selena, his-his partner, roommate, girlfriend, significant other, lover-there were many words for this relationship, though none were quite right. The woman with whom he lived, with whom he had gone through graduate school and two post-docs, with whom he had moved to Eumenides Point, taking a small apartment near the beach, near the terminus of the coastal tram, where when one looked back east the point itself just heaved over the horizon, like a dorsal fin seen far out to sea. Selena was making great progress in her own field, genetically engineering salt grasses; a subject of great importance here, where they were trying to stabilize a thousand-kilometer coastline of low dunes and quicksand swamps. Scientific and bioengineering progress; important achievements, relevant to the situation; all things were coming to her professionally, including of course offers to team up in any number of exciting public/co-op collaborations.

And all things were coming to her privately as well. Smith had always thought her beautiful, and now he saw that with her success, other men were coming to the same realization. It took only a little attention to see it; an ability to look past shabby lab coats and a generally unkempt style to the sleekly curving body and the intense, almost ferocious intelligence. No-his Selena looked much like all the rest of the lab rats when in the lab, but in the summers when the group went down in the evening to the warm tawny beach to swim, she walked out the long expanse of the shallows like a goddess in a bathing suit, like Venus returning to the sea. Everyone in these

parties pretended not to notice, but you couldn't help it.

All very well; except that she was losing interest in him. This was a process that Smith feared was irreversible; or, to be more precise, that if it had gotten to the point where he could notice it, it was too late to stop it. So now he watched her, furtive and helpless, as they went through their domestic routines; there was a goddess in his bathroom, showering, drying off, dressing, each moment like a dance.

But she didn't chat any more. She was absorbed in her thoughts, and

tended to keep her back to him. No-it was all going away.

They had met in an adult swim club in Mangala, while they were both grad students at the university there. Now, as if to re-invoke that time, Smith took up Frank's suggestion and joined him at an equivalent club in Eumenides Point, and began to swim regularly again. He went from the tram or the lab down to the big fifty-meter pool, set on a terrace overlooking the ocean, and swam so hard in the mornings that the whole rest of the day he buzzed along in a flow of beta endorphins, scarcely aware of his work problems or the situation at home. After work he took the tram home feeling his appetite kick in, and banged around the kitchen throwing together a

meal and eating much of it as he cooked it, irritated (if she was there at all) with Selena's poor cooking and her cheery talk about her work, irritated also probably just from hunger, and dread at the situation hanging over them; at this pretense that they were still in a normal life. But if he snapped at her during this fragile hour she would go silent the whole rest of the evening; it happened fairly often; so he tried to contain his temper and make the meal and quickly eat his part of it, to get his blood sugar level back up.

Either way she fell asleep abruptly around nine, and he was left to read into the timeslip, or even ship out and take a walk on the night beach a few hundred yards away from their apartment. One night, walking west, he saw Pseudophobos pop up into the sky like a distress flare down the coast, and when he came back into the apartment she was awake and talking happily on the phone; she was startled to see him, and cut the call short, thinking about what to say, and then said, "That was Mark, we've gotten tamarisk three fifty-nine to take repetitions of the third sail flusher gene!"

"That's good," he said, moving into the dark kitchen so she wouldn't see his face.

This annoyed her. "You really don't care how my work goes, do you."
"Of course I do. That's good. I said."

She dismissed that with a noise

Then one day he got home and Mark was there with her, in the living room, and at a single glance he could see they had been laughing about something; had been sitting closer together than when he started opening the door. He ignored that and was as pleasant as he could be.

The next day as he swam at the morning workout, he watched the women swimming with him in his lane. All three of them had swum all their lives, their freestyle stroke perfected beyond the perfection of any dance move ever made on land, the millions of repetitions making their movement as unconscious as that of any fish in the sea. Under the surface he saw their bodies flowing forward, revealing their sleek lines—classic swimmer lines, like Selena's—rangy shoulders tucking up against their ears one after the next, ribcages smoothed over by powerful lats, breasts flatly merged into big pees or else bobbing left then right, as the case might be; bellies meeting high hipbones accentuated by the high cut of their swimsuts, backs curving up to bottoms rounded and compact, curving to powerful thighs then long calves, and feet outstretched like ballerinas. Dance was a weak analogy for such beautiful movement. And it all went on for stroke after stroke, lay after lap, until he was mesemrized beyond further thought or observa

tion; it was just one aspect of a sensually saturated environment. Their current lane leader was pregnant, yet swimming stronger than any of the rest of them, not even huffing and puffing during their rest intervals, when Smith of then had to suck air—instead she laughed and shook her head, exclaiming "Every time I do a flip turn he keeps kicking me!" She was seven months along, round in the middle like a little whale, but still she fired down the pool at a rate none of the other three in the lane could match. The strongest swimmers in the club were simply amazing. Soon after getting into the sport, Smith had worked hard to swim a hundred-meter freestyle in less than a minute, a goal appropriate to him, and finally he had done it once at a meet and been pleased; then later he heard about the local college women's team's workout, which consisted of a hundred hun-

dred-meter freestyle swims all on a minute interval. He understood then that although all humans looked roughly the same, some were stupendously stronger than others. Their pregnant leader was in the lower echelon of these strong swimmers, and regarded the swim she was making today as a light stretching-out, though it was beyond anything her lane mates could do with their best effort. You couldn't help watching her when passing by in the other direction, because despite her speed she was supremely smooth and effortless, she took fewer strokes per lap than the rest of them, and vet still made substantially better time. It was like magic. And that sweet blue curve of the new child carried inside

Back at home things continued to degenerate. Selena often worked late. and talked to him less than ever.

"I love you," he said, "Selena, I love you,"

"I know."

He tried to throw himself into his work. They were at the same lab, they could go home late together. Talk like they used to about their work, which though not the same, was still genomics in both cases; how much closer

could two sciences be? Surely it would help to bring them back together. But genomics was a very big field. It was possible to occupy different parts of it, no doubt about that. They were proving it. Smith persevered, however, using a new and more powerful electron microscope, and he began to make some headway in unraveling the patterns in his fossilized DNA.

It looked like what had been preserved in the samples he had been given was almost entirely what used to be called the junk DNA of the creature. In times past this would have been bad luck, but the Kohl labs in Acheron had recently been making great strides in unraveling the various purposes of junk DNA, which proved not to be useless after all, as might have been guessed, development being as complex as it was. Their breakthrough consisted in characterizing very short and scrambled repetitive sequences within junk DNA that could be shown to code instructions for higher hierarchical operations than they were used to seeing at the gene level-cell dif-

ferentiation, information order sequencing, apoptosis, and the like. Using this new understanding to unravel any clues in partially degraded

fossil junk DNA would be hard, of course. But the nucleotide sequences were there in his EM images-or, to be more precise, the characteristic mineral replacements for the adenine=thymine and cytosine=guanine couplets, replacements well-established in the literature, were there to be clearly identified. Nanofossils, in effect; but legible to those who could read them. And once read, it was then possible to brew identical sequences of living nucleotides, matching the originals of the fossil creature. In theory one could recreate the creature itself, though in practice nothing like the entire genome was ever there, making it impossible. Not that there weren't people trying anyway with simpler fossil organisms, either going for the whole thing or using hybrid DNA techniques to graft expressions they could decipher onto living templates, mostly descendants of the earlier creature.

With this particular ancient dolphin, almost certainly a fresh-water dolphin (though most of these were fairly salt tolerant, living in river-mouths as they did), complete resuscitation would be impossible. It wasn't what Smith was trying to do anyway. What would be interesting would be to find fragments that did not seem to have a match in the living descendants' genome, then hopefully synthesize living in vitro fragments, clip them into contemporary strands, and see how these experimental animals did in hybridization tests and in various environments. Look for differences in function

He was also doing mitochondrial tests when he could which if successful would permit tighter dating for the species' divergence from precursor species. He might be able to give it a specific slot on the marine mammal family tree, which during the early Pliocene was very complicated.

Both avenues of investigation were labor-intensive, time-consuming, almost thoughtless work-perfect, in other words. He worked for hours and hours every day, for weeks, then months. Sometimes he managed to go home on the tram with Selena; more often he didn't. She was writing up her latest results with her collaborators, mostly with Mark, Her hours were irregular. When he was working he didn't have to think about this; so he worked all the time. It was not a solution, not even a very good strategy-it even seemed to be making things worse—and he had to attempt it against an ever-growing sense of despair and loss; but he did it nevertheless.

"What do you think of this Acheron work?" he asked Frank one day at work, pointing to the latest print-out from the Kohl lab, lying heavily annotated on his desk.

"It's very interesting! It makes it look like we're finally getting past the

genes to the whole instruction manual."

"If there is such a thing." "Has to be, right? Though I'm not sure the Kohl lab's values for the rate adaptive mutants will be fixed are high enough. Ohta and Kimura suggest-

ed 10 percent as the upper limit, and that fits with what I've seen,"

Smith nodded, pleased, "They're probably just being conservative," "No doubt, but you have to go with the data."

"So-in that context-you think it makes sense for me to pursue this fossil junk DNA?"

Well, sure. What do you mean? It's sure to tell us interesting things."

"It's incredibly slow."

"Why don't you read off a long sequence, brew it up and venter it, and see

what you get?"

Smith shrugged. Whole-genome shotgun sequencing struck him as slipshod, but it was certainly faster. Reading small bits of single-stranded DNA, called expressed sequence tags, had quickly identified most of the genes on the human genome; but it had missed some, and it ignored even the regulatory DNA sequences controlling the protein-coding portion of the genes, not to mention the so-called junk DNA itself, filling long stretches

between the more clearly meaningful sequences.

Smith expressed these doubts to Frank, who nodded, but said, "It isn't the same now that the mapping is so complete. You've got so many reference points you can't get confused where your bits are on the big sequence. Just plug what you've got into the Lander-Waterman, then do the finishing with the Kohl variations, and even if there are massive repetitions, you'll still be okay. And with the bits you've got, well they're almost like ests anyway, they're so degraded. So you might as well give it a try."

Smith nodded.

That night he and Selena trammed home together. "What do you think of the possibility of shotgun sequencing in vitro copies of what I've got?" he asked her shyly.

"Sloppy," she said. "Double jeopardy."

A new schedule evolved. He worked, swam, took the tram home. Usually Sclena wasn't there. Often their answering machine held messages for her from Mark, talking about their work. Or messages from her to Smith, telling him that she would be home late. As it was happening so often, he sometimes went out for dinner with Frank and other lane mates, after the evening work-touts. One time at a beach restaurant they ordered several pitchers of beer, and then went out for a walk on the beach, and ended up running out into the shallows of the bay and swimming around in the warm dark water, so different from their pool, splashing each other and laughing hard. It was a good time.

But when he got home that night, there was another message on the answering machine from Selena, saying that she and Mark were working on their paper after getting a bite to eat, and that she would be home extra late.

She wasn't kidding; at two o'clock in the morning she was still out. In the long minutes following the timeslip Smith realized that no one stayed out this late working on a paper without calling home. This was therefore a message of a different kind.

Pain and anger swept through him, first one then the other. The indirection of it struck him as cowardly. He deserved at least a revelation—a confession—a scene. As the long minutes passed he got angrier and angrier, then frightened for a moment, that she might have been hurt or something. But she hadnt. She was out there somewhere fooling around. Suddenly he

was furious.

He pulled cardboard boxes out of their closet and yanked open her drawers, and threw all her clothes in heaps in the boxes, crushing them in so they would all fit. But they gave off their characteristic scent of laundry soap and her, and smelling it he groaned and sat down on the bed, knees weak. If he carried through with this he would never again see her putting on and taking off these clothes, and just as an animal he groaned at the thought.

But men are not animals. He finished throwing her things into boxes, took them outside the front door and dropped them there.

She came back at three. He heard her kick into the boxes and make some muffled exclamation.

He hurled open the door and stepped out.

"What's this?" She had been startled out of whatever scenario she had planned, and now was getting angry. Her, angry! It made him furious all over again.

"You know what it is."
"What!"

"You and Mark."

She eyed him.

"Now you notice," she said at last. "A year after it started. And this is your first response." Gesturing down at the boxes.

He hit her in the face.

Immediately he crouched at her side and helped her sit up, saying "Oh God Selena I'm sorry, I'm sorry, I didn't mean to," he had only thought to slap her for her contempt, contempt that he had not noticed her betrayal earlier, "I can't believe I..."

"Get away," striking him off with wild blows, crying and shouting, "get away, get away, frightened, "you bastard, you miserable bastard, what do you, don't you dare hit me!" in a near shriek, though she kept her voice down too, aware still of the apartment complex around them. Hands held to her face.

'Tm sorry Selena. I'm very very sorry, I was angry at what you said but I know that sin', that doesn't. .'I'm sorry.' Now he was as angry at himself as he had been at her—what could he have been thinking, why had he given her the moral high ground like this, it was she who had broken their bond, it was she who should be in the wrong! She who was now sobbing—turning away—suddenly walking off into the night. Lights went on in a couple of windows nearby. Smith stood staring down at the boxes of her lovely clothes, his right knuckles throbbing.

That life was over. He lived on alone in the apartment by the beach, and kept going in to work, but he was shunned there by the others, who all knew what had happened. Selena did not come in to work again until the bruisse were gone, and after that she did not press charges, or speak to him about that night, but she did move in with Mark, and avoided him at work when she could. As who wouldn't. Occasionally she dropped by his nook to ask in a neutral voice about some logistical aspect of their break-up. He could not meet her eye. Nor could he meet the eye of anyone else at work, not properly. It was strange how one could have a conversation with people and appear to be meeting their gaze during it, when all the time they were not really quite looking at them. Primate subtlettes, honed over millions of years on the savanna.

He lost appetite, lost energy. In the morning he would wake up and wonder why he should get out of bed. Then looking at the blank walls of the bedroom, where Selena's prints had hung, he would sometimes get so angry at her that his pulse hammered uncomfortably in his neck and forehead. This got him out of bed, but then there was nowhere to go, except work. And there everyone knew he was a wije beater, a domestic abuser, an asshole.

Martian society did not tolerate such people.

Shame or anger; anger or shame. Grief or humiliation. Resentment or re-

gret. Lost love. Omnidirectional rage.

Mostly he didn't swim anymore. The sight of the swimmer women was too painful now, though they were as friendly as always; they knew nothing of the lab except him and Frank, and Frank had not said anything to them about what had happened. It made no difference. He was cut off from them. He knew he ought to swim more, and he swam less. Whenever he resolved to turn things around he would swim two or three days in a row, then let it fall away again.

Once at the end of an early evening workout he had forced himself to attend—and now he felt better, as usual—while they were standing in the lane steaming, his three most constant lane mates made quick plans to go to a nearby trattoria after showering. One looked at him. "Pizza at

Rico's?"

He shook his head. "Hamburger at home," he said sadly.

They laughed at this. "Ah, come on. It'll keep another night."

"Come on, Andy," Frank said from the next lane. "I'll go too, if that's okay." "Sure." the women said. Frank often swam in their lane too.

"Well. . . ." Smith roused himself. "Okay."

He sat with them and listened to their chatter around the restaurant table. They still seemed to be slightly steaming, their hair wet and wisping away from their foreheads. The three women were young. It was interesting; away from the pool they looked ordinary and undistinguished: skinny, mousy, plump, maladroit, whatever, With their clothes on you could not guess at their fantastically powerful shoulders and lats, their compact smooth musculatures. Like seals dressed up in clown suits, waddling around a stage.

"Are you okay?" one asked him when he had been silent too long. "Oh yeah, yeah." He hesitated, glanced at Frank. "Broke up with my girlfriend.

"Ah ha! I knew it was something!" Hand to his arm (they all bumped into each other all the time in the pool): "You haven't been your usual self lately."

"No." He smiled ruefully. "It's been hard." He could never tell them about what had happened. And Frank wouldn't

either. But without that none of the rest of his story made any sense. So he couldn't talk about any of it.

They sensed this and shifted in their seats, preparatory to changing the topic, "Oh well," Frank said, helping them, "Lots more fish in the sea,"

In the pool," one of the women joked, elbowing him.

He nodded, tried to smile.

They looked at each other. One asked the waiter for the check, and another said to Smith and Frank, "Come with us over to my place, we're going to get in the hot tub and soak our aches away."

She rented a room in a little house with an enclosed courtvard, and all the rest of the residents were away. They followed her through the dark house into the courtvard, and took the cover off the hot tub and turned it on, then took their clothes off and got in the steaming water. Smith joined them, feeling shy, People on the beaches of Mars sunbathed without clothes all the time, it was no big deal really. Frank seemed not to notice, he was perfectly relaxed. But they didn't swim at the pool like this.

They all sighed at the water's heat. The woman from the house went inside and brought out some beer and cups. Light from the kitchen fell on her as she put down the dumpie and passed out the cups. Smith already knew her body perfectly well from their many hours together in the pool; nevertheless he was shocked seeing the whole of her. Frank ignored the sight,

filling the cups from the dumpie.

They drank beer, talked small talk. Two were vets; their lane leader, the one who had been pregnant, was a bit older, a chemist in a pharmaceutical lab near the pool. Her baby was being watched by her co-op that night. They all looked up to her, Smith saw, even here. These days she brought the baby to the pool and swam just as powerfully as ever, parking the babycarrier just beyond the splash line. Smith's muscles melted in the hot water. He sipped his beer listening to them.

One of the women looked down at her breasts in the water and laughed.

They float like pull buoys."

Smith had already noticed this. "No wonder women swim better than men."

"As long as they aren't so big they interfere with the hydrodynamics." Their leader looked down through her fogged glasses, pink-faced, hair tied up, misted, demure, "I wonder if mine float less because I'm nursing,"

"But all that milk "

"Yes, but the water in the milk is neutral density, it's the fat that floats. It could be that empty breasts float even more than full ones."

"Whichever has more fat, vuck,"

"I could run an experiment, nurse him from just one side and then get in and see-" but they were laughing too hard for her to complete this scenario, "It would work! Why are you laughing!"

They only laughed more. Frank was cracking up, looking blissed, blessed, These women friends trusted them. But Smith still felt set apart. He looked at their lane leader: a pink bespectacled goddess, serenely vague and unaware; the scientist as heroine; the first full human being.

But later when he tried to explain this feeling to Frank, or even just to describe it. Frank shook his head. "It's a had mistake to worship women," he warned, "A category error, Women and men are so much the same it isn't worth discussing the difference. The genes are identical almost entirely, you know that. A couple hormonal expressions and that's it. So they're just like you and me

"More than a couple."

"Not much more. We all start out female, right? So you're better off thinking that nothing major ever really changes that. Penis just an oversized clitoris. Men are women. Women are men. Two parts of a reproductive system, completely equivalent,"

Smith stared at him. "You're kidding."

"What do you mean?" "Well-I've never seen a man swell up and give birth to a new human be-

ing, let me put it that way."

So what? It happens, it's a specialized function. You never see women ejaculating either. But we all go back to being the same afterward. Details of reproduction only matter a tiny fraction of the time. No, we're all the same. We're all in it together. There are no differences."

Smith shook his head. It would be comforting to think so. But the data did not support the hypothesis. Ninety-five percent of all the murders in

history had been committed by men. This was a difference,

He said as much, but Frank was not impressed. The murder ratio was becoming more nearly equal on Mars, he replied, and much less frequent for everybody, thus demonstrating very nicely that the matter was culturally conditioned, an artifact of Terran patriarchy no longer relevant on Mars. Nurture rather than nature, Although it was a false dichotomy, Nature could prove anything you wanted, Frank insisted. Female hyenas were vicious killers, male bonobos and muriquis were gentle cooperators. It meant nothing, Frank said. It told them nothing.

But Frank had not hit a woman in the face without ever planning to.

Patterns in the fossil Inia data sets became clearer and clearer. Stochastic resonance programs highlighted what had been preserved. "Look here." Smith said to Frank one afternoon when Frank leaned in to

say good-bye for the day. He pointed at his computer screen. "Here's a sequence from my boto, part of the GX three oh four, near the juncture, see?" You've got a female then?"

"I don't know. I think this here means I do. But look, see how it matches with this part of the human genome. It's in Hillis 8050. . . .

Frank came into his nook and stared at the screen, "Comparing junk to junk . . . I don't know

"But it's a match for more than a hundred units in a row, see? Leading right into the gene for progesterone initiation."

Frank squinted at the screen. "Um, well." He glanced quickly at Smith.

Smith said, "I'm wondering if there's some really long-term persistence in junk DNA, all the way back to earlier mammals precursors to both these.

"But dolphins are not our ancestors," Frank said.

"There's a common ancestor back there somewhere."

"Is there?" Frank straightened up. "Well, whatever, I'm not so sure about the pattern congruence itself. It's sort of similar, but. vou know." "What do you mean, don't you see that? Look right there!"

Frank glanced down at him, startled, then non-committal. Seeing this Smith became inexplicably frightened.

"Sort of," Frank said. "Sort of. You should run hybridization tests, maybe, see how good the fit really is. Or check with Acheron about repeats in non-"But the congruence is perfect! It goes on for hundreds of pairs, how could

that be a coincidence?" Frank looked even more non-committal than before. He glanced out the

door of the nook. Finally he said, "I don't see it that congruent. Sorry, I just don't see it. Look, Andy. You've been working awfully hard for a long time. And you've been depressed too, right? Since Selena left?"

Smith nodded, feeling his stomach tighten. He had admitted as much a few months before. Frank was one of the very few people these days who

would look him in the eve.

"Well, you know. Depression has chemical impacts in the brain, you know that. Sometimes it means you begin seeing patterns that others can't see as well. It doesn't mean they aren't there, no doubt they are there. But whether they mean anything significant, whether they're more than just a kind of analogy, or similarity—" He looked down at Smith and stopped. "Look, it's not my field. You should show this to Amos, or go up to Acheron and talk to the old man."

"Uh huh. Thanks, Frank."

"Oh no, no, no need. Sorry, Andy. I probably shouldn't have said anything. It's just, you know. You've been spending a hell of a lot of time here." "Yeah."

Frank left.

Sometimes he fell asleep at his desk. He got some of his work done in dreams. Sometimes he found he could sleep down on the beach, wrapped in a greatcoat on the fine sand, lulled by the sound of the waves rolling in. At work he stared at the lined dots and letters on the screens, constructing the schematics of the sequences, nucleotide by nucleotide. Most were completely unambiguous. The correlation between the two main schematics was excellent, far beyond the possibility of chance. X chromosomes in humans clearly exhibited non-gene DNA traces of a distant aquatic ancestor, a kind of dolphin. Y chromosomes in humans lacked these passages, and they also matched with chimpanzees more completely than X chromosomes did. Frank had appeared not to believe it, but there it was, right on the screen. But how could it be? What did it mean? Where did any of them get what they were? They had natures from birth. Just under five million years ago,

chimps and humans separated out as two different species from a common ancestor, a woodland ape. The *Inis geoffrensis* fossil Smith was working on had been precisely dated to about 5.1 million years old. About half of all orangutan sexual encounters are rape.

One night after quitting work alone in the lab, he took a tram in the wrong direction, downtown, without ever admitting to himself what he was doing, until he was standing outside Mark's apartment complex, under the steep rise of the dorsum ridge. Walking up a staircased alleyway ascending the ridge gave him a view right into Mark's windows. And there was Selena, washing dishes at the kitchen window and looking back over her shoulder to talk with someone. The tendon in her neck stood out in the light. She laughed.

Smith walked home. It took an hour, Many trams passed him.

He couldn't sleep that night. He went down to the beach and lay rolled in his greatcoat. Finally he fell asleep.

He had a dream. A small hairy bipedal primate, chimp-faced, walked like a hundback down a beach in east Africa, in the late afternoon sun. The warm water of the shallows lay greenish and translucent. Dolphins rode inside the waves. The ape waded out into the shallows. Long powerful arms, evolved for hitting; a quick grab and he had one by the tail, by the dorsal fin. Surely it could escape, but it didn't try. Female; the ape turned her over, mated with her, released her. He left and came back to find the dolphin in the shallows, giving birth to twins, one male one female. The ape's troop swarmed into the shallows, killed and ate them both. Farther offshore the dolphin birthed two more.

The dawn woke Smith. He stood and walked out into the shallows. He saw dolphin sinside the transparent indigo waves. He waded out into the surf. The water was only a little colder than the work-out pool. The dawn sun was low. The dolphins were only a little longer than he was, small and lithe. He bodysurfed with them. They were faster than him in the waves, but flowed around him when they had to. One leaped over him and splashed back into the curl of the wave ahead of him. Then one flashed under him, and on an impulse he grabbed at its dorsal fin and caught it, and was suddenly moving faster in the wave, as it rose with both of them inside it—by far the greatest bodysurfing ride of his life. He held on. The dolphin and all the rest of its pod turned and swam out to sea, and still he held on. This is it, he thought. Then he remembered that they were air-breathers too, It was going to be all right. O

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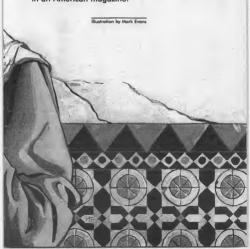
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Chris Lawson

WRITTEN IN BLOOD

Chris Lawson is an Australian author who has had several stories published in his native journal, Eidolon. His complex new tale of faith and family, "Written in Blood," is his first story to appear in an American magazine.



CTA TAA CAG TET AGC GAC GAA TGT CTA CAG AAA CAA GAA TGT CAT GAG TGT CTA GAT CAT AAC CGA TGT AGC GAC GAA TGT CTA CAA GAA AGG AAT TAA GAG GGA TAC CGA TGT AGC GAC GAA TGT CTA AAT CAT CAA CAC AAA AGT AGT TAA CAT CAG AAA AGC GAT TGC TTC TTT



In the Name of God, the Merciful, the Compassionate.

hese words open the Qur'an. They were written in my father's blood.

After Mother died, and Da recovered from his chemotherapy, we went on a pilgrimage together. In my usual eleven-year-old curious way, I asked him why we had to go to the Other End of the World to pray when we could do it just fine at home.

"Zada," he said, "there are only five pillars of faith. It is easier than any of the other pillars because you only need to do it once in a lifetime. Remember this during Ramadan, when you are hungry and you know you will be

hungry again the next day, but your hai will be over."

Da would brook no further discussion, so we set off for the Holy Lands. At eleven, I was less than impressed: I expected to Inf Paradise filled with thousands of fountains and birds and orchards and blooms. Instead, we huddled in cloth tents with hundreds of thousands of sweaty pilgrims, most of whom spoke other languages, as we tramped across a cramped and dirty wasteland. I wondered why Allah had made his Holy Lands so dry and dusty, but I had the sense even then not to ask Da about it.

Near Damascus, we heard about the bloodwriting. The pilgrims were all speaking about it. Half thought it a path to Heaven. Since Da was a biologist, the pilgrims in our troop asked him what he thought. He said he would have to go to the bloodwriters di-

rectly and find out.

On a dusty Monday, after morning prayer, my father and I visited the bloodwriter's stall. The canvas was a beautiful white, and the man at the stall smiled as Da approached. He spoke some Arabic, which I could not understand.

"I speak English," said my father.

The stall attendant switched to English with the ease of a juggler chang-

ing hands. "Wonderful, sir! Many of our customers prefer English."
"I also speak biology. My pilgrim companions have asked me to review
your product." I thought it very forward of my father, but the stall atten-

dant seemed unfazed. He exuded confidence about his product.

"An expert!" he exclaimed. "Even better. Many pilgrims are distrustful of Western science. I do what I can to reassure them, but they see me as a salesman and not to be trusted. I welcome your endorsement."

"Then earn it."

The stall attendant wiped his mustache, and began his spiel. "Since the Dawn of Time, the Word of Allah has been read by mullahs. . . .

"Stop!" said Da. "The Qur'an was revealed to Mohammed fifteen centuries ago; the Dawn of Time predates it by several billion years. I want an-

swers, not portentous falsehoods."

Now the man was nervous. "Perhaps you should see my uncle. He invented the bloodwriting. I will fetch him." Soon he returned with an older. infinitely more respectable man with grey whiskers in his mustache and hair.

"Please forgive my nephew," said the old man. "He has watched too much American television and thinks the best way to impress is to use dramatic words, wild gestures, and where possible, a toll-free number." The nephew bowed his head and slunk to the back of the stall, chastened. "May I answer your questions?" the old man asked.

"If you would be so kind," said Da, gesturing for the man to continue.

"Bloodwriting is a good word, and I owe my nephew a debt of gratitude for that. But the actual process is something altogether more mundane. I of-

fer a virus, nothing more. I have taken a hypo-immunogenic strain of adenoassociated virus and added a special code to its DNA."

Da said, "The other pilgrims tell me that you can write the Qur'an into

their blood." "That I can, sir," said the old man. "Long ago I learned a trick that would

get the adeno-associated virus to write its code into bone marrow stem cells. It made me a rich man. Now I use my gift for Allah's work. I consider it part of my zakât." Da suppressed a wry smile. Zakât, charitable donation, was one of the

five pillars. This old man was so blinded by avarice that he believed selling his invention for small profit was enough to fulfill his obligation to God.

The old man smiled and raised a small ampoule of red liquid. He continued, "This, my friend, is the virus. I have stripped its core and put the entire text of the Qur'an into its DNA. If you inject it, the virus will write the

Qur'an into your myeloid precursor cells, and then your white blood cells will carry the Word of Allah inside them." I put my hand up to catch his attention. "Why not red blood cells?" I

asked. "They carry all the oxygen."

The old man looked at me as if he noticed me for the first time. "Hello, little one. You are very smart. Red blood cells carry oxygen, but they have no DNA. They cannot carry the Word."

It all seemed too complicated to an eleven-year-old girl.

My father was curious. "DNA codes for amino acid sequences. How can you write the Qur'an in DNA?"

"DNA is just another alphabet," said the old man. He handed my father a card. "Here is the crib sheet."

My father studied the card for several minutes, and I saw his face change from skeptical to awed. He passed the card to me. It was filled with Arabic squiggles, which I could not understand. The only thing I knew about Ara-

bic was that it was written right-to-left, the reverse of English. "I can't read it." I said to the man. He made a little spinning gesture with his finger, indicating that I should flip the card over. I flipped the card and

saw the same crib sheet, only with Anglicized terms for each Arabic letter. Then he handed me another crib sheet, and said: "This is the sheet for English text."

Written in Blood

AAA	a	AGA q	ATA [] dash	ACA
AAG	b	AGG r	ATG // slash	ACG
AAT	c	AGT s	ATT {stop}	ACT
AAC	d	AGC t	ATC {stop}	ACC
GAA	е	GGA u	GTA ['] apostrophe	GCA (stop)
GAG	f	GGG v	GTG ["] quotation mark	GCG
GAT	g	GGT w	GTT [(] open bracket	GCT 0
GAC	h	GGC x	GTC []] close bracket	GCC 1
TAA	i	TGA y	TTA [?] question mark	TCA 2
TAG	j	TGG z	TTG [!] exclamation	TCG 3
TAT	k	TGT [] space	TTT [•] end verse	TCT 4
TAC	1	TGC [.] period	TTC [¶] paragraph	TCC 5
CAA	m	CGA [,] comma	CTA {cap} capital	CCA 6
CAG	n	CGG [:] colon	CTG	CCG 7
CAT	0	CGT [;] semi-colon	CTT	CCT 8
CAC	p	CGC [-] hyphen	CTC	CCC 9

"The Arabic alphabet has 28 letters. Each letter changes form depending on its position in the word. But the rules are rigid, so there is no need to put each variation in the crib sheet. It is enough to know that the letter is aliph or bi, and whether it is at the start, at the end, or in the middle of the word.

"The [stop] commands are also left in their usual places. These are the body's natural commands and they tell ribosomes when to stop making a protein. It only cost three spots and there were plenty to spare, so they stayed in."

stayed in.

My father asked, "Do you have an English translation?"
"Your daughter is looking at the crib sheet for the English

"Your daughter is looking at the crib sheet for the English language," the old man explained, "and there are other texts one can write, but not the Qur'an."

Thinking rapidly, Da said, "But you could write the Qur'an in English?"
"If I wanted to pursue secular causes, I could do that," the old man said.

"But I have all the secular things I need. I have copyrighted crib sheets for all the common alphabets, and I make a profit on them. For the Quiran, however, translations are not acceptable. Only the original words of Mohammed can be trusted. It is one thing for dhimmis to translate it for their own curiosity, but if you are a true believer you must read the word of God in its unsullied form."

Da stared at the man. The old man had just claimed that millions of Muslims were false believers because they could not read the original Qur'an. Da shook his head and let the matter go. There were plenty of imams who

would agree with the old man.

"What is the success rate of the inoculation?"

"Ninety-five percent of my trial subjects had identifiable Qur'an text in their blood after two weeks, although I cannot guarantee that the entire text survived the insertion in all of those subjects. No peer-reviewed journal would accept the paper." He handed my father a copy of an article from Modern Gene Techniques. "Not because the science is poor, as you will see for yourself, but because Islam scares them."

Da looked serious, "How much are you charging for this?"

"Aha! The essential question. I would dearly love to give it away, but even

enough to cover my costs, and no haggling. It is a hundred US dollars or equivalent."

Da looked into the dusty sky, thinking. "I am puzzled," he said at last. "The Qur'an has one hundred and fourteen suras, which comes to tens of thousands of words. Yet the adeno-associated virus is quite small. Surely it

can't all fit inside the viral coat?" At this the old man nodded, "I see you are truly a man of wisdom. It is a patented secret, but I suppose that someday a greedy industrialist will lay hands on my virus and sequence the genome. So, I will tell you on the con-

dition that it goes no further than this stall."

Da gave his word. "The code is compressed. The original text has enormous redundancy, and with advanced compression, I can reduce the amount of DNA by over

80 percent. It is still a lot of code." I remember Da's jaw dropping. "That must mean the viral code is self-ex-

tracting. How on Earth do you commandeer the ribosomes?"

"I think I have given away enough secrets for today," said the old man. "Please forgive me," said Da, "It was curiosity, not greed, that drove me to ask." Da changed his mind about the bloodwriter. This truly was fair za-

kât. Such a wealth of invention for only a hundred US dollars. "And the safety?" asked my father. The old man handed him a number of papers, which my father read care-

fully, nodding his head periodically, and humming each time he was impressed by the data. "I'll have a dose," said Da, "Then no one can accuse me of being a slipshod

"Sir, I would be honored to give a complimentary bloodwriting to you and your daughter."

"Thank you. I am delighted to accept your gift, but only for me. Not for my daughter. Not until she is of age and can make her own decision." Da took a red ampoule in his hands and held it up to the light, as if he was looking through an envelope for the letters of the Qur'an. He shook his head at the marvel and handed it back to the old man, who drew it up in a syringe.

That night, our fellow pilgrims made a fire and gathered around to hear my father talk. As he spoke, four translators whispered their own tongues to the crowd. The scene was like a great theater from the Arabian Nights. Scores of people wrapped in white robes leaned into my father's words, drinking up his excitement. It could have been a meeting of princes.

Whenever Da said something that amazed the gathered masses, you could hear the inbreath of the crowd, first from the English-speakers, and then in patches as the words came out in the other languages. He told them about DNA, and how it told our bodies how to live. He told them about introns, the long stretches of human DNA that are useless to our bodies, but that we carry still from viruses that invaded our distant progenitors, like ancestral scars. He told them about the DNA code, with its triplets of adenine, guanine, cytosine, and thymine, and he passed around copies of the bloodwriter's crib sheet. He told them about blood, and the white cells that fought infection. He talked about the adeno-associated virus and how it injected its DNA into humans. He talked about the bloodwriter's injection and the mild fever it had given him. He told them of the price.

And he answered questions for an hour.

The next day, as soon as the morning prayers were over, the bloodwriting stall was swamped with customers. The old man ran out of ampoules by mid-morning, and only avoided a riot by promising to bring more the following day.

I had made friends with another girl. She was two years younger than I was, and we did not share a language, but we still found ways to play together to relieve the boredom.

One day, I saw her giggling and whispering to her mother, who looked furtively at me and at Da. The mother waved over her companions, and spoke to them in solemn tones. Soon a very angry-looking phalanx of women descended on my unsuspecting father. They stood before him, hands on hips, and the one who spoke English pointed a finger at me.

"Where is her mother?" asked the woman. She was taller than the others. a weather-beaten woman who looked like she was sixty, but must have been younger because she had a child only two years old. "This is no place

for a young girl to be escorted by a man." "Zada's mother died in a car accident back home. I am her father, and I

can escort her without help thank you." "I think not." said the woman.

"What right have you to say such a thing?" asked Da, "I am her father." The woman pointed again. "Ala says she saw your daughter bathing, and she has not had the khitan. Is this true?"

"It is none of your business," said Da. The woman screamed at him, "I will not allow my daughter to play with harlots. Is it true?"

"It is none of your business."

The woman lurched forward and pulled me by my arm. I squealed and twisted out of her grasp and ran behind my father for protection. I wrapped my arms around his waist and held on tightly. Show us," demanded the woman, "Prove she is clean enough to travel

with this camp."

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Da refused, which made the woman lose her temper. She slapped him so hard she split his lip. He tasted the blood, but stood resolute. She reached around and tried to unlock my arms from Da's waist. He pushed her away. "She is not fit to share our camp. She should be cut, or else she will be

shamed in the sight of Allah," the woman screamed. The other women were shouting and shaking their fists, but few of them knew English, so it was as much in confusion as anger. My father fixed the woman with a vicious glare. "You call my daughter

shameful in the sight of Allah? I am a servant of Allah. Prove to me that Allah is shamed and I will do what I can to remove the shame. Fetch a mullah." The woman scowled, "I will fetch a mullah, although I doubt your

promise is worth as much as words in the sand." "Make sure the mullah speaks English," my father demanded as she

slipped away. He turned to me and wiped away tears, "Don't worry, Zada, No harm will come to you."

"Will I be allowed to play with Ala?"

"No. Not with these old vultures hanging around." By the evening, the women had found a mullah gullible enough to medi-

ate the dispute. They tugged his sleeves as he walked toward our camp, hurrying him up. It was obvious that his distaste had grown with every minute in the company of the women, and now he was genuinely reluctant to speak on the matter.

The weathered woman pointed us out to the mullah and spat some words

The weathered woman pointed us out to the mullah and spat some wor at him that we did not understand.

"Sir, I hear that your daughter is uncircumcised. Is this true?"

"It is none of your business," said Da.

The mullah's face dropped. You could almost see his heart sinking. "Did you not promise. . . ?"
"I promised to discuss theology with you and that crone. My daughter's

anatomy is not your affair."

"Please, sir..."

Da cut him off abruptly. "Mullah, in your considered opinion, is it neces-

sary for a Muslim girl to be circumcised?"

"It is the accepted practice," said the mullah.
"I do not care about the accepted practice. I ask what Mohammed says."
"Well, I'm sure that Mohammed says something on the matter," said the

mullah.

"Show me where."
The mullah coughed, thinking of the fastest way to extract himself. "I did

not bring my books with me," he said.

Da laughed, not believing that a mullah would travel so far to mediate a theological dispute without a book. "Here, have mine," Da said as he passed the Qur'an to the mullah. "Show me where Mohammed says such a thing."

The mullah's shoulders slumped, "You know I cannot, It is not in the

Qur'an. But it is sunnah."
"Sunnah." said Da, "is very clear on the matter. Circumcision is
makrumah for women. It is honorable but not compulsory. There is no re-

makrumah for women. It is honorable bu quirement for women to be circumcised."

quirement for women to be dircumsised. "Sir, you are very learned. But there is more to Islam than a strict reading of the Qur'an and sunnah. There have even been occasions when the word of Mohammed has been overturned by later imams. Mohammed himself knew that he was not an expert on all things, and he said that it was the responsibility of future generations to rise above his imperfect knowl-

edge."
"So, you are saying that even if it was recorded in the Qur'an, that would not make it compulsory." Da gave a smile—the little quirk of his lips that he gave every time be had laid a logical trap for someone.

The mullah looked grim. The trap had snapped shut on his leg, and he was not looking forward to extricating himself.

"Tell these women so we can go back to our tents and sleep," said Da.

The mullah turned to the women and spoke to them. The weathered woman became agitated and started waving her hands wildly. Her voice was an overwrought screech. The mullah turned back to us.

"She refuses to share camp with you, and insists you leave."

De fixed the mullah with his iron gaze. "Mullah, you are a learned man in a difficult situation, but surely you can see the woman is half-mad. She complains that my daughter has not been mutilated, and would not taint herself with my daughter's presence. Yet she is tainted herself. Did she tell you that she tried to assault my daughter and strip her naked in public view? Did she tell you that she inflicted this wound on me when I stood be-

tween her and my daughter? Did she tell you that I have taken the bloodwriting, so she spilled the Word of God when she drew blood?"

The mullah looked appalled. He went back to the woman, who started screeching all over again. He cut her off and began berating her. She stopped talking, stunned that the mullah had turned on her. He kept berating her until she showed a sign of humility. When she bowed her head, the mullah stopped his tirade, but as soon as the words stopped she sent a dagger-glance our way.

That night, three families pulled out of our camp. Many of the others in camp were pleased to see them go. I heard one of the grandmothers mutter

"Taliban" under her breath, making a curse of the words.

The mood in camp lifted, except for mine. "It's my fault Ala left," I said.
"No, it is not your fault," said Da. "It was her family's fault. They want
the whole world to think the way they think and to do what they do. This is
against the teaching of the Qur'an, which says that there shall be no coer-

cion in the matter of faith. I can find the sura if you like."
"Am I unclean?"

"No," said Da. "You are the most beautiful girl in the world."

By morning, the camp had been filled by other families. The faces were more friendly, but Ala was gone. It was my first lesson in intolerance, and it came from my own faith.

In Sydney, we sat for hours, waiting to be processed. By the third hour, Da finally lost patience and approached the customs officer.

"We are Australian citizens, you know?" Da said.

"Please be seated. We are still waiting for cross-checks."

"I was born in Brisbane, for crying out loud! Zada was born in Melbourne,

My family is Australian four generations back."

His protests made no difference. Ever since the Saladin Outbreak, customs checked all Muslims thoroughly. Fifty residents of Darwin had died from an outbreak of a biological weapon that the Saladins had released. Only a handful of Saladins had survived, and they were all in prison, and it had been years ago, but Australia still treated its Muslims as if every single one of us was a terrorist waiting for the opnortunity to go berserk.

We were insulted, shouted at, and spat on by men and women who then stepped into their exclusive clubs and talked about how uncivilized we were. Once it had been the Aborigines, then it had been the Italian and Greek immigrants; a generation later it was the Asians; now it was our turn. Da thought that we could leave for a while, go on our pilgrimage and return to a more settled nation, but our treatment by the eustoms officers.

indicated that little had changed in the year we were away.

They forced Da to strip for a search, and nearly did the same for me, until Da threatened them with child molestation charges. They took blood samples from both of us. They went through our lugagae ruthlessly. They X-rayed our suitcases from so many angles that Da joked they would glow in the dark.

the dark.

Then they made us wait, which was the worst punishment of all.

Then they made us want, which was the worst punishment of all.

Da leaned over to me and whispered, "They are worried about my blood.

They think that maybe I am carrying a deadly virus like a Saladin. And who knows? Maybe the Qur'an is a deadly virus." He chuckled.

"Can they read your blood?" I asked.

"Yes, but they can't make sense of it without the code sheet."

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"If they knew it was just the Qur'an texts, would they let us go?" "Probably," said Da.

"Why don't you give it to them, then?"

He sighed. "Zada, it is hard to understand, but many people hate us for no reason other than our faith. I have never killed or hurt or stolen from anyone in my life, and yet people hate me because I pray in a church with a crescent instead of a cross.

"But I want to get out of here," I pleaded.

"Listen to me, daughter, I could show them the crib sheet and explain it to them, but then they would know the code, and that is a terrifying possibility. There are people who have tried to design illnesses that attack only Jews or only blacks, but so far they have failed. The reason why they have failed is that there is no serological marker for black or Jewish blood. Now we stupid Muslims, and I count myself among the fools, have identified ourselves. In my blood is a code that says that I am a Muslim, not just by birth, but by active faith. I have marked myself. I might as well walk into a neo-Nazi rally wearing a Star of David.

"Maybe I am just a pessimist," he continued. "Maybe no one will ever design an anti-Muslim virus, but it is now technically possible. The longer it takes the dhimmis to find out how, the better."

I looked up at my father. He had called himself a fool, "Da, I thought you were emert!

"Most of the time, darling. But sometimes faith means you have to do the dumb thing.

"I don't want to be dumb," I said.

Da laughed, "You know you can choose whatever you want to be. But there is a small hope I have for you. To do it you would need to be very, very smart."

"What?" I asked.

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"I want you to grow up to be smart enough to figure out how to stop the illnesses I'm talking about. Mark my words, racial plagues will come one day, unless someone can stop them."

"Do you think I could?"

Da looked at me with utter conviction, "I have never doubted it."

Da's leukemia recurred a few years later. The chemotherapy had failed to cure him after all, although it had given him seven good years: just long enough to see me to adulthood, and enrolled in genetics. I tried to figure out a way to cure Da, but I was only a freshman. I understood less than half the words in my textbooks. The best I could do was hold his hand as he slowly died.

It was then that I finally understood what he meant when he said that sometimes it was important not to be smart. At the climax of our haj we had gone around the Kaabah seven times, moving in a human whirlpool. It made no sense at all intellectually. Going around and around a white temple in a throng of strangers was about as pointless a thing as you could possibly do, and yet I still remember the event as one of the most moving in my life. For a brief moment I felt a part of a greater community, not just of Muslims, but of the Universe, With that last ritual, Da and I became haii and hajjah, and it felt wonderful. But I could not put aside my thoughts the way Da could. I had to be

smart. Da had asked me to be smart. And when he died, after four months

and two failed chemo cycles. I no longer believed in Allah. I wanted to maintain my faith, as much for my father as for me, but my heart was empty.

The event that finally tipped me, although I did not even realize it until much later, was seeing his blood in a sample tube. The oncology nurse had drawn 8 mls from his central line, then rolled the sample tube end over end to mix the blood with the anticoagulant. I saw the blood darken in the tube as it deoxygenated, and I thought about the blood cells in there. The white cells contained the suras of the Qur'an, but they also carried the broken code that turned them into cancer cells.

Da had once overcome leukemia years before. The doctors told me it was very rare to have a relanse after seven years. And this relanse seemed to be more aggressive than the first one. The tests, they told me, indicated this was a new mutation.

Mutation: a change in genetic code, Mutagen; an agent that promotes mutation.

Bloodwriting, by definition, was mutagenic. Da had injected one hundred and fourteen suras into his own DNA. The designer had been very careful to make sure that the bloodwriting virus inserted itself somewhere safe so it would not disrupt a tumor suppressor gene or switch on an oncogenebut that was for normal people. Da's DNA was already damaged by leukemia and chemotherapy. The virus had written a new code over the top, and I believe the new code switched his leukemia back on.

The Qur'an had spoken to his blood, and said: "He it is Who created you from dust, then from a small lifegerm, then from a clot, then He brings you forth as a child, then that you may attain your maturity, then that you may be old-and of you there are some who are caused to die before-and that you may reach an appointed term, and that you may understand, / He it is who gives life and brings death, so when He decrees an affair. He only says

to it: Be. and it is."

I never forgave Allah for saving "Be!" to my father's leukemia.

An educated, intelligent biologist. Da must have suspected that the Qur'an had killed him. Still, he never missed a prayer until the day he died. My own faith was not so strong. It shattered like fine china on concrete. Disbelief is the only possible revenge for omnipotence.

An infidel I was by then, but I had made a promise to my father, and for my postdoc I solved the bloodwriting problem. He would have been proud.

I abandoned the crib sheet. In my scheme the codons were assigned randomly to letters. Rather than preordaining TAT to mean zen in Arabic or "k" in English. I designed a process that shuffled the letters into a new configuration every time. Because there are 64 codons, with three (stop) marks and eight blanks, that comes to about 5 × 1083 or 500,000,000,000,000,000. ,000 000,000,000,000 combinations. No one could design a virus specific to the Qur'an suras anymore. The dhimmi bastards would need to design a different virus for every Muslim on the face of the Earth. The faith of my father was safe to bloodwrite.

In my own blood I have written the things important to me. There is a picture of my family, a picture of my wedding, and a picture of my parents from when they were both alive. Pictures can be encoded just as easily as

There is some text: Crick and Watson's original paper describing the dou-

ble-helix of DNA, and Martin Luther King's "I Have a Dream" speech. I also transcribed Cassius's words from *Julius Caesar*:

The fault, dear Brutus, is not in our stars, But in ourselves, that we are underlings.

For the memory of my father, I included a Muslim parable, a sunnah story about Mohammed: One day, a group of farmers asked Mohammed for guidance on improving their crop. Mohammed told the farmers not to pollinate their date trees. The farmers recognized Mohammed as a wise man, and did as he said. That year, however, none of the trees bore any dates. The farmers were angry, and they returned to Mohammed demanding an explanation. Mohammed heard their complaints, then pointed out that he was a religious man, not a farmer, and his wisdom could not be expected to encompass the sum of human learning. He said, "You know your worldly business better."

It is my favorite parable from Islam, and is as important in its way as Jesus' Sermon on the Mount.

At the end of my insert, I included a quote from the dhimmi Albert Einstein, recorded the year after the atomic bombing of Japan.

He said, "The release of atom power has changed everything but our way of thinking," then added, "The solution of this problem lies in the heart of

humankind."

I have paraphrased that last sentence into the essence of my new faith.

No God was ever so succinct. My artificial intron reads:

8 words, 45 codons, 135 base pairs that say:

CTA AGC GAC GAA TGT AGT CAT TAC GGA AGC TAA CAT CAG TGT TAC TAA GAA AGT TGT TAA CAG TGT AGC GAC GAA TGT GAC GAA AAA AGG AGC TGT CAT GAG TGT GAC GGA CAA AAA CAG TAT TAA CAG AAC TGC

The solution lies in the heart of humankind.

I whisper it to my children every night. O



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Cory Doctorow

VISIT THE SINS

Cory Doctorow is a Toronto-based multimedia developer whose last story, "Fall from Grace," appeared in our October/ November 1998 issue. His latest tale is about one of today's most vexing problems and its terrifying "cure."



ean had a way of getting his way—a way of delivering argument that implied that everyone in earshot was savy and bold, and that the diatribe-du-jour was directed at the Enemies of Art ranged without. His thesis advisor bought it every time. Sean turned in his due-diligence, a bunch of theses written in the last century: collected memoirs of the survivors of electroshock, lobotomies, thalidomide. His advisor signed off and within twenty-four hours, he was debarking in Orlando and renting a car to take him to the Home.

He didn't tell his father. He'd have to, eventually, before he could finish the thesis. But for now, it was just him and Grampa, head-to-head.

Grampa was switched off when Sean found him on the ward, which throbbed with a coleslaw of laser-light and videogames and fuck-pix and explosions and car-wrecks and fractals and atrocities.

Sean remembered visits before the old man was committed, he and his dutiful father visiting the impeccable apartment in the slate house in Kingston, Ontario. Grampa made tea and conversation, both perfectly executed and without soul. It drove Sean's father bugfuck, and he'd inevitably have a displaced tantrum at Sean in the car on the way home. The first time Grampa had switched on in Sean's presence—while Sean was trying out a prototype of Enemies of Art against his father's own As All Right-

Grampa had been in maintenance mode, running through a series of iso-

Thinking People Know-it had scared Sean stupid.

metric stretching exercises in one corner while Sean and his father had it out. Then, suddenly, Grampa was between them, arguing both sides with machine-gun passion and lucidity, running an intellect so furious it appeared to be steam-driven. Sean's tongue died in his mouth. He was made wordless by this vibrant, violent intellect that hid inside Grampa. Grampa and his father had traded extemporaneous barba until Grampa abruptly switched back off during one of Sean's father strange abruptly switched back off during one of Sean's father stalked out of the house and roared out of the driveway then, moving with such speed that if Sean hadn't been right on his heels, he would never have gotten into the car before his father took off.

And now, here was Grampa in maintenance mode. He was sitting at a table, flexing his muscles one-at-a-time from top to bottom. It was an antipressure-sore routine. Sean guessed that it was after-market, something the Home made available for low-functioning patients like Grampa.

Sean sat down opposite him. Grampa smiled and nodded politely. Sean swallowed his gorge. The ones who'd had the surgery had been scattered, unable to focus, until they'd had the operation, and suddenly it wasn't a problem anymore. Whenever their attention dropped below a certain threshold, they just switched off, until the world regained some excitement. It had been a miracle, until the kids stopped making the effort to keep their attention above the threshold, and started to slip sawy into oblivion.

"Hello, Grampa," Sean said.

Grampa stared at him from dark eyes set in deep, wrinkled nests. Behind them, Sean could almost see the subroutines churning. "Sean," Grampa said. Woodenly, he stood and came around the table, and gave Sean a precise hug and cheek-kiss. Sean didn't bother returning either.

He put the recorder on the table between them and switched it on.

Grampa was a moderately wealthy man. He'd achieved much of that wealth prior to his retirement, working as a machinist on really delicate, tricky stuff. The family assumed that he did this work switched off, letting the subroutines run the stullitying repetitions, but in his prelim research, Sean had talked to one of Grampa's co-workers, who said that Grampa had stayed switched on more often than not. Grampa had equired the rest of the wealth shortly before Sean's father had sent him south, to the Home. The years-old class action suit brought by the guilty, horrified families of accidental zombies had finally ended with a settlement, and all the Survivors became instant millionaires in-trust.

For all the good it did them.

"How are you?" Grampa asked, placidly.

"Tm working on my thesis, Grampa. I'm here to interview you—I'll be around for the next couple weeks."

"That's nice," Grampa said. "How's your father?"

"He's fine. I didn't tell him I was coming down, though. You're a touchy subject for him."

Grampa settled back into his chair. Sean was distantly aware of other Survivors on the ward, gabbling and twitching at videogames and smoking all at once. They were high-functioning—they could be switched on with simple stim; Grampa only switched on for important occasions.

Sean said, "Dad wishes you'd die."

That did it. It was easy to tell when Grampa was switched on; the rhythmic, methodical maintenance twitching was replaced with a restless, allower flöget, and his eyes darted around the room. "Is he in some kind offinancial trouble? He doesn't need to wait for a bequest—I'll write to the trustees right now."

Sean restrained himself from saying hello again, now that Grampa was switched on. He kept himself focused on the task of keeping Grampa switched on. "He wishes you'd die because he hates you and he hates himself for it. When you die, he can stop hating you and start mourning you. He knows it wasn't your fault. That's why I'm here. I want to ollect your stories and make some sense out of them, before you die." Sean took a deep breath. "Will you stay switched on?"

Grampa looked uncomfortable. "Your grandmother used to ask me that. I'd promise her I'd do it, every time, but then . . . it's not voluntary. Sean.

It's reflex."

... "It is bearned reflex, Grampa. It's not breathing. You didn't sak to have the surgery, but you learned the reflex all no your own. You slow you rattention to drop below the threshold, you allow the chip to switch you off. Some people do it less," he jetted his head at the other old men and women, playing their twitch games and shouting arguments at each other. "Some don't do it at all."

"Bullshit" Grampa said, leaning forward and planting his hands on his knees—aggro Type-A body-language that Sean often found himself assuming. "Urhan legend, kid. Everyone learned it. Once you had the surgery, you couldn't help it. You know what I'm talking about, or you wouldn't be here. Your father, too—if he was ever honest enough to admit it. You've both got

it as bad as me, but no one ever tried to cure you."
"I don't have it," Sean said. "I just got off a three-hour plane-ride, and I was able to just look out the window the whole way. It didn't bother me. That's not coping mechanism, either—I never even wanted to watch the

seat-back vid or chat up my neighbor." It wasn't true, actually. He had fidgeted like crazy, splitting the screen-in-screen on the seat-back into sixteen quads and watching as many stations as he could. He'd tried to assemble his thoughts on his recorder, but he'd been too wound up. Eventually, somewhere over Georgia, he'd surrendered to the screen and to counting powers of two.

Grampa pierced him with his stare. "If your ego demands that you believe

that, then go ahead."

Sean restrained himself from squirming. He focused himself on directing

the discussion. "What do you like best about the Home?"

Grampa considered the question for so long that Sean was afraid he'd
switched off. "No one makes me feel guilty for switching off. No one tells me

that I'm weak. Except your father, of course."

"Dad's been here?" Sean said, shocked. When?"
"Your father visits every month. He shouts at me until I switch on, then he leaves. He does it because the doctor told him that if I didn't switch on more often that they'd move me to the zero-function ward. Sounds fine to me, and I tell him so, but he's never thought much of his brain-damaged old man."

"Where do you go when you're switched off?" Sean asked. It was a question that was supposed to come later in the interview, maybe on day two,

but he was rattled.

"I don't know. Away."

"Is it like sleep?" Sean said, forgetting the rule that you never ask the subject a simple yes/no question. His heart thudded in his chest, like he was giving the first interview of his life.

"No."

"How is it different from sleep?" Soan asked.

"I usually switch on for sleep—my subconscious is pretty good at entertaining me, actually. When I switch off, I just... go away. I remember it later, like it was a book that got read directly into my brain, but I'm not there. It's fucking great, You'd love it, Sean. You should get the surgery. I hear that there's a lot of black-market clinics where you can get it done: South

East Asia. The sex-trade, you know."

Sean struggled to keep the discussion on-track. Grampa was often hostile when he was switched on, and his father always rose to the bait. Sean wasn't going to. "How do you know that you're not there? Maybe you're there the whole time, bored stupid, screaming in frustration, and you forget it all as

soon as you switch on?"

Grampa raised an eyebrow at him. "Of course I am! But that's not the *me*that's important—I'm the one that counts. And I get to fast-forward past all
the slow parts. Which this is turning into. I'm afraid."

Grampa's eyes stopped seeking out the ward's corners, and he slipped back into maintenance mode. The noise and lights of the ward closed in around Sean. He scooped up his recorder. "Thanks, Grampa," he said, woodenly. "T

"Bye, Sean," Grampa said, and came around the table for another hug

Sean checked into the first motel he found, the Lamplighter Inn, on a dreary strip populated with disused water parks and crumbling plazas. He

lay down on the bed, fed the Magic Fingers, and played back the recording.

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It was junk. The noise of the ward masked nine words in ten, and what words made it through were empty, devoid of any kind of emotional freight, He tried to transcribe it longhand, filling in the blanks from memory, but couldn't keep his mind on it. He took off his sweaty, wrinkled T-shirt and slacks, dumped out his suit-

case on the chipped, cigarette-burned table, and found his bathing suit.

There was one other guest by the pool, an old, old woman in a one-piece with a skirt, wearing a sunhat tilted to shade her from the last of the pounding Florida sun. Sean gave her a perfunctory nod and jumped in.

The water was piss-warm, thickly chlorinated. It felt like swimming in pungent sweat. Sean managed one lap and then crawled out and sat in a sway-backed deck-chair.

"I wouldn't go swimming in that if I were you," the old woman said, in a husky, nicotine-stained voice. She clattered a grin at him through her dentures. She was the color and texture of rawhide, not so much tanned as baked.

"Now you tell me." Sean said, squinting at her under his hand,

"Old Ross doesn't like dealing with the pool, so he just keeps on shoveling in the chlorine. Don't be surprised if you're blond in the morning. My name's Adele. You here for long?"

"A couple weeks, at least," Sean said.

Adele smiled and nodded, "That's good, That's fine, A good stretch of time to see the Parks. Don't miss Universal, either-I think it's better than Dis-

ney. Most people don't bother with it, but for my money, it's better." I don't think I'll get a chance to visit either," Sean said. "I've got a lot of work to do down here." He waited for her to ask him what kind of work, and mentally rehearsed the high-concept speech that he'd given a thousand

times while working on the thesis proposal. "What a shame," she said. "Where did you come down from?"

"Toronto," he said. "Lord, not another snowbird!" she said, good-naturedly, "Seems like half of Canada's down here! They come here to get away from the winter, then they complain about the heat! What do they expect, that's what I want to know! Was your flight good?"

"It was fine," Sean said, bemusedly. "A little dull, but fine."

"So, you're here for a few weeks." Adele said.

"Yes. Working," Sean said.

"Nice work if you can get it!" Adele said, and clattered her dentures again. "I moved here, oh, five years ago. To be near my boy. In the hospital. I used to work, but I'm retired. Used to work at a dairy-answering the phones! You tell people you used to work in a dairy, they think you were milking the cows! Old Ross, he gives me an annual rate for my room, It's better than living in one of those gated places! Lord! How much shuffle-

board can a body stand?'

"Your son is sick?" Sean said. "Not sick, no," Adele said. "You wouldn't believe the roaches you get down here! Old Ross fumigates regular, but Florida roaches don't seem to care. I've lived in New York, and I've seen some pretty big roaches in my day, but not like these. Like cats! My boy, Ethan, he'd clean and clean our apartment in New York, quiet as you please, a good boy. Then he'd see a roach and whim-wham, he'd be talking, joking, skipping and running. Old Ross says there's nothing he can do-he says, 'Adele, this is Florida, and the roaches were here long before us, and they'll be here long after, and nothing we do is going to keep them away.' That's all fine and good, but let me tell you, I've never seen a roach in the Home when I was visiting Ethan. They know how to keep them out. Maybe it's all the shouting, Lord, but they do shout!"

A small lightbulb blinked in Sean's mind. "Is Ethan very high-functioning?" he asked, carefully.

Adele glanced sidelong at him and said, "The doctor says no. But I think he is. He's always walking around when I'm there, doing push-ups and situps. He's not a young man, Ethan-sixty this year! When his father was that age, he didn't do any push-ups, no sir! But the doctor, he says that Ethan's at zero function, Doctors! What do they know?"

How old was Ethan when he had the surgery?" Sean asked.

"Just seven," Adele said, without changing her light tone, but Sean saw knives of guilt in her eyes. "He was going to be held back in the first grade, or sent to a special school. They sent a doctor around to explain it. Ethan was smart as a whip, everyone knew that, but he just couldn't concentrate. It made him miserable, and he'd pitch these hissyfits all the time. It didn't matter where he was: the classroom, home, out on the street-in church! He'd scream and shout and kick and bite, you've never seen anything like it. The doctors, they told us that he'd just keep on getting worse unless we did something about it.

"It seemed like a miracle. In my day, they'd just drug you up."

Sean knew the names of the old drugs: Ritalin, Cylert, Dexedrine. Anything that would keep you still and numb. Then came the surgery. Adele brightened. "You should really try to at least visit Universal for an

afternoon, you know. It's lovely." They're going to move my grandfather to the zero-function ward. I think.

If he doesn't spend more time switched on, they will," Sean said, "I want to get his story before they do it." And if not his stories, the reasons-reasons for who Sean was, who his father was.

"What a nice grandson you are! You know, it seems like no one cares about their grandparents anymore. Old Ross's grandchildren haven't visited once in the five years I've been here."

Sean gave Adele a ride the next day. She wore the sunhat and a lightweight cotton dress and sandals, and looked frail and quaint.

Sean thought Adele would get off at a different floor, to visit Ethan, but

she walked with him across Grampa's ward. Grampa was sitting just where he had been the day before. His chin was shaved blue, and he was impeccable. He was methodically slicing and eat-

ing a hamburger. Grampa," Sean said.

"Hello, Sean," Grampa said. He laid his knife and fork in a precise X on his plate and pushed it aside.

This is Adele. Her son is in the zero-function ward. She wanted to meet you. Adele, this is my grandfather, Brice Devick.'

Pleased to meet you, Adele," Grampa said, and shook her hand.

"Likewise," she said. "Do you know my Ethan? I'm worried that he doesn't seem to have any friends here."

"I haven't met him," Grampa said.

"Well, would you do an old lady a big favor? Go and visit him. Your grand-

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son tells me you're smart—Ethan is as smart as a whip. You two should have lots to talk about."

"I will," Grampa said.

"Tm sure you two will get on very well. It was a pleasure to meet you. Excuse me, I'm sure Ethan's wondering where I am."

Sean waited until she was out of earshot, then said, "Her son's a fucking vegetable. You're about 80 percent of the way there. You're spending so much time switched off, you might as well be dead."

"What do you know about it?" Grampa said, fidgeting.

What do you know about H: Grampa sau, nageeing.

"I know plenty, "Sean said. "Plenty! You spent less than 15 percent of the time switched off until you hit college. Then you switched off for months at a time. You used it for a study aid! I pulled your logfiles, when I was at Dad"s—he's had them ever since you were declared non compos. You're a junkle, Grampa. You don't have the will power to kick your habit, and it makes my Dad nuts. I never knew you, so it just makes me curious. Let's talk about the first time you remember switching off."

Grampa snorted. "That's a stupid question. You don't remember switch-

ing off-that's the whole point."

Sean rolled his eyes. "You know what I mean. You may not remember switching off, but you'll remember switching on. Switching on has to be

memorable, doesn't it? Isn't that the whole point?"
"Fine. I switched on for about twenty minutes in a movie that I snuck out of school to see when I was twelve. It was in French, and it had made a lot of noise because it had a sex scene with a live pig. I saw that scene, and two others—another sex scene and a scene where this woman cuts the pig's throat. I loved it. All my friends had done the same thing, but by the time the good parts had come around, they were too bored to enjoy them. I just caught the highlight reel."

"How long until you next switched off?"

"I don't know. A while."

"It was two days. I have the logfile, remember, Grampa? Don't jerk my chain. You switched off during Friday dinner. Did your parents notice?"

"Of course they noticed! They loved it! For once, I wasn't kicking the table-leg or arguing with my sisters or stuffing sprouts in my pocket. I cleaned my plate, then sat and waited until everyone else was done, then I did the dishes."

"How'd you like it?"

"I loved it! I hated family dinners! I just got the highlight reel again dessert! I remember that fucking bowl of pudding like I was eating it right now. My mother couldn't cook for shit, but she sure opened a mean package of Jello Pudding."

Sean found his mood matching Grampa's, aggressive and edgy. "How did you and Grandma end up getting married? I can't imagine that she was hot

for a zombie like you."

"Oh, but she would be seen, she wor!" Grampa waggled his eyebrow. lasciviously. "Your Graman didn't like people much. She knew she had to get married, her folks expected no less but she mostly wanted to be off to see own, doing her own thing. He found home, switch off, clean the place, do any chores she had for me, then go to bed. She loved to have sex with me switched off, it gots othat if I accidentally switched off, where we were doing it. I'd pretend I was still off, until she was done. It was the perfect arrangement."

"But she divorced your sorry ass after ten years," Sean said. "You got a girlfriend, Sean?" Grampa said.

"No," Sean said.

"You ever had a girlfriend?"

"Yes," Sean said, feeling slightly smug. Never ask yes/no question.

"Why'd she leave you?" Grampa asked, his eyes sharp as razors. "What makes you think she left me?" Sean asked.

"Did she?" Grampa fired back.

"Yes," Sean said, as calmly as he could manage.

"And why did that happen?"

"We were growing in different directions," Sean said, the words sounding prim even to him. Grampa barked and slapped his palm on the table. The old men and

women in the ward swiveled their heads to stare, momentarily distracted, then went back to arguing.

"You're full of shit, kid. What's that supposed to mean?"

"I was working on my thesis proposal. Lara was working on hers, Neither

of us had time for a relationship. It was amicable," Lara had caught him watching television over her shoulder while she was delivering one of her dreaded Relationship Briefings, and had laid into him a little too hard. He'd come back at her with everything he had, an extended rant that ranged from her lame-ass thesis-the cultural impact of some obscure TV show from before they'd been born-to her backbiting, over-educated circle of friends. He'd moved on to her relationship with her mother; her insufferable whining about a suicidal uncle she'd been close to; and her pretentious way of sprinkling her speech with stupid pseudo-intellectual buzzwords. He crossed the line again and again and she kicked him out on his ass.

"Dad says that you never switched on during the divorce."

"Your Dad has nothing to complain about. He got enough pity lavished on him to kill ten men. It was all your grandmother's family could do not to deyour him whole.

"But you staved switched off," Sean said.

"In the court, I was switched off, Ever been in a court, Sean?" "You staved switched off."

"In the courtroom."

"And before, during the separation?"

"Same thing," Grampa said.

"And after, during visitations?"

"Not then," Grampa said, loudly. "Not during visitations."

"Tve got the logfiles, Grampa," Sean said.

"What the hell do a twelve-year-old and a grown man have to talk about?

I kept him fed, I took him out to the carny and to kiddie movies, I drove him to hockey." "You switched off, Grampa," Sean said. "The you that counted wasn't

"Sophistry," Grampa said, "Bullshit, I remember all of it, I was there, Not

many other parents were, let me tell you. Usually, it was just me and a few others in the stands, or kids running around loose like animals at the carny.

Your father has nothing to complain about." Why, aren't you two looking excited!" Adele said, hobbling alongside of the table. She was leaning on Ethan, a vigorous old man with sinewy arms

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and dead eyes. His face was unlined, free from smile lines and frowning creases.

"Hi, Adele," Sean said, trying to keep the exasperation out of his voice.

"Ethan, this is Sean and his grandfather, Brice."

Ethan extended his hand and Sean shook it. "Very nice to meet you," Ethan said. His hand was dry and papery, his eyes vacant. Sean shook it, and a frisson of shameful disgust sizzled up his abdomen. He had a sudden vision of Ethan's brain, desiccated in his skull, the gleaming edges of the chip poking free. He surreptitiously wiped his hand on his pants as Ethan turned to Grampa and shook his hand. "Very nice to meet

"Do you mind if we sit down?" Adele said. "I'm afraid that I'm a little

pooped. All those stairs!"

Sean offered his chair and went off to the lounge with Ethan to get two more. When they got back, Adele had her hand on Grampa's forearm. "—I worked in a dairy, answering the phones! You tell people you used to work in a dairy, they think you were milking the cows!" Adele laughed and Grampa shot Sean a hostile look.

Sean said, "Grampa was a machinist before he retired. You really liked

doing that, huh, Grampa?"

Grampa nodded perfunctorily.

"I mean, the logfiles show that you almost never switched off at work.

Must've been pretty engrossing. You should give workshops here. I bet it'd be good therapy." Sean knew he was baiting the old man, but he couldn't stop himself.

"Your father's arriving tomorrow," Grampa said. "He called last night. I

didn't tell him you were here, I thought it would be a nice surprise."

Adele clapped her hands. "Well isn't that nice! Three generations, all together. Sean, you'll have to introduce Ethan and me to your father. Ethan

never had children, isn't that right?" Ethan said. "Yes."

"Always the bachelor, my boy. But it wasn't for lack of opportunity. You had to beat them off with a stick, didn't you, son?"

Ethan said, "Yes."
"I always hoped for a grandchild to hold, but you have to let your children

live their own lives, isn't that right, Brice?"
"Yes," Grampa said, with a kind of horrified fascination.

"Ethan was always too busy for romance."

"Yes," Ethan said.

"Working and working and working for that transcription service. You must have typed a million words. Did you ever count them, Ethan?"

"Yes," Ethan said. "I typed roughly fifteen million words."

"Nowadays, of course, no one types. It's all talking to computers now. When I was a girl, they all said that you'd always have a job if you just learned to type. Times sure change, don't they?"
"Yes," Ethan and Grampa said together. Grampa startled like he'd been

shocked.
"Dad's coming tomorrow?" Sean said.

Grampa said, "Yes. He's catching the six AM. He'll be here by ten."

"Isn't that nice," Adele said.

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They left Grampa and Ethan sitting at the table together. Sean looked

back over his shoulder before they got on the elevator, and Grampa was still switched on, staring hard at him.

"You must be excited about seeing your father again," Adele said to him when they were sitting around the pool.

Sean was getting the hang of talking to Adele. "Ethan and my grandfather seem to be hitting it off."

"Oh, I certainly hope so! Ethan could use some friends at that place."

Sean pictured the two of them, seated across from each other at the ward table, running maintenance routines at each other, saving, "Yes," "Yes," Unbidden, a grin came to Sean's face.

"Why did you put Ethan in the Home?" Sean asked, shifting to catch

more sun on his face.

"He wanted to go," she said. "The doctor came by and told him about it and asked him if he wanted to go, and he said 'Yes,' That was it!'

Sean snuck a look at Adele. She was wincing into the light, following it like a sunflower. "Adele," he said.

"Yes, Sean?"

"Ethan was in maintenance mode. He was switched off. He said 'Yes,' because his subroutines didn't want to be any trouble. You know that, right?" "Oh, that foolishness again! Ethan's a good boy, is all. He remembers my

birthday and Mother's Day, every year." "Subroutines, Adele," Sean said, straining to keep an inexplicable anger

out of his voice. "Humph! Subroutines!" "Adele, he's a robot, He's a walking coma. He's been switched off for so

long, all you're talking to is a goddamn chip, he's not a goddamn person anymore. None of them are, My goddamn Grampa's spent three-quarters of his goddamn life away. He's either an angry old bastard, or he's a goddamn zombie. You know that, right?"

"Sean, you're very upset," Adele said. "Why don't you have a nice liedown, and we'll talk in the morning. I can't wait to meet your father!"

Sean stalked off to his room and tried to record some field notes while flipping around in the weird, poky corners of the motel's cable system, Japanese game-shows and Hindu religious epics. He smoked half a cigarette, drank half a beer, tried to masturbate, and finally, slept.

Adele rang his room-phone at eight. "Rise and shine, sunshine!" she said. "Your father will be at the airport in an hour!"

Sean dressed, but didn't bother shaving or brushing his teeth. He staggered out to his rental and gave Adele a sheepish grin. Acid churned in his

gut. Adele waited by the passenger door, in a pair of slacks and a light blouse. She had hung a pair of sunglasses around her neck on a gold chain, and car-

ried an enormous sisal handbag. Staggering in the horrible daylight, Sean opened the passenger door for her, and offered his arm while she got in. He put the car onto the Bee Line Expressway and pointed it at the air-

port. "Oh, won't this be fun?" Adele said, as he ground the crap from the cor-

ners of his eyes and steered with his knees. "I'm sure your father is charming. Maybe the five of us can go to Universal for an afternoon."

I don't think we can take them off the ward," Sean grunted, changing lanes for the airport exit.

"You're probably right." Adele said. "I was just thinking that Universal might be enough to keep them both switched on."

Sean shot her a look and nearly missed his exit. Adele rattled a laugh at him. "Don't look so surprised. I know which end is up!"

Sean pursed his lips and navigated the ramp-maze that guarded the airport. He pulled up to the loading zone at Air Canada arrivals and switched off the engine. He looked past Adele at the tourists jockeying for cabs. "I'm

sorry about vesterday. I guess I'm a little wound up.

"Yesterday?" Adele said. "Oh! By the pool!" She put a frail hand on his forearm. "Sean, you don't get to my age by holding grudges. Ethan's father-he held grudges, and it killed him. Heart attack. He never forgave the doctors. I'm just happy to have a chauffeur." Sean swallowed hard. "I'm sure that somewhere, Ethan knows that

you're visiting him, that you love him. He's in there." He said it with all the sincerity he could muster.

"Maybe he is, maybe he isn't," Adele said. "But it makes me feel better. He's what I've got left. If you'd like, I'll wait with the car so you can go in and look for your father.'

"No," Sean said. "That's all right. Dad'll come out for a cab. He's not the

sort to dawdle."

"I like a decisive man. That's why I talked to you by the pool-you just jumped in, because you wanted a swim,"

"Adele, that was stupid. It was like swimming in a urine sample."

"Same difference. I like a man who can make up his mind. That's what Ethan's father was like: decisive." "You'll like my Dad," Sean said. He drummed his fingers on the wheel, then lowered and raised his window. He whistled tunelessly through his teeth. Adele gave him a considering stare and he stopped, and started in on

powers of two in his head.

"There he is," Sean said, 224 later. Sean had barely been in Florida for three days, but it was long enough that his father seemed as pale as freezer-burned ice cream. Sean checked the traffic in his rear-view, then pulled across the waiting area to where his father stood, acing out an irate cabbie for the spot,

Sean's father glared at the car and started to walk behind it to the taxi. Sean leaned on the horn and his father stooped and stared. His expression

was bland and grim and affectless.

Sean powered down Adele's window. "Dad!" "Sean?" his father said.

Sean popped the locks, "Get in, Dad, I'll give you a ride,"

Adele turned around as Sean's father was buckling in. "I'm Adele. Sean and I were thinking of taking you to Universal, Would you like that?" Sean's father stared right through her, at Sean. "It's an obvious question,

I know, but what are you doing here?"

"It's my thesis," Sean said, and floored the rental, headed for the Home. "Whee!" Adele said

"How's Grampa?" Sean's father asked. "Oh, he's delightful," Adele said, "We introduced him to my Ethan vesterday, and they're getting along famously. Sean, introduce me to your charm-

ing father, please."

"Dad," Sean said, through gritted teeth, "This is Adele, Adele, my father, Mitch. We were thinking of getting day-passes for Grampa and Ethan and taking them to Universal. You ever been to Universal, Dad? I hear you come here down a lot." His normally fragmented attention was as focused as a laser, boring into his father through the rear-view. His father's stern face refused to expose any of his confusion, "I don't

think I want to go to Universal," he said.

"Oh, but it's wonderful," Adele gushed, "You shouldn't knock it until

you've tried it." "I don't think so," Sean's father repeated, "What's your thesis?"

Sean plunged headlong into the breach. "It's called The Tri-Generational Deficit: What's My Father's Excuse?" Sean's father nodded curtly. "And how's it going?"

"Well, you have to understand, I'm just warming up to the subject with

Grampa. And then I'll have to do an interview series with you, of course.' "Did I miss something? When did I become the principal ogre in your pan-

theon? Are you angry at me?"

Sean barked a laugh and turned onto the Home's exit-ramp, "I guess I am, Dad. Grampa had the operation-it was easy for him to switch off. You needed to make a special effort." The words flew from his mouth like crows, and Sean clamped his jaw shut. He tensed for the inevitable scathe of verbiage. None came. He risked a glance in his rear-view.

His father was staring morosely out at the Home. Adele patted Sean's hand and gave him a sympathetic look. Sean parked the car.

"Hi, Pop." Sean's father said, when they came to the table where Grampa

sat. Ethan sat across from him. Grampa glared at them, "This guy won't leave me alone, He's a fucking vegetable," he said, gesturing at Ethan. Adele pursed her lips at him. He

patted her arm absently. "It needed to be said." Sean's father reached around the table and gave Grampa a stiff hug.

"Good to see you, Pop. "Yeah, likewise, Sit down, Mitch, Sit down, Sean, Sit down, Adele," They

sat. "Ask your questions, Sean," he ordered.

Sean found himself tongue-tied. He heaved a deep breath and closed his eyes for a moment. He thought about why he was here: not the reason he'd given his thesis advisor, but the real goddamn reason. He wanted to understand—his father, himself. He wanted to reverse-engineer his father's childhood. He looked at Ethan, slack as Grampa had been whenever they'd visited. An inkling glimmered. "Does Ethan scare you, Grampa?"

Adele tsked and scowled.

"Do I scare you, Mitch?" Grampa said, to Sean's father,

"Yes," Sean's father said.
"Yes," Grampa said. "Next question."

"Do you think that switching off is a sign of weakness?" Sean said, sneak-

ing a glance at his father, seeing his grandfather's features echoed in his father's face.

"Yes," his father said.

"Of course," his grandfather said.

"Then why?" Sean said.

"You know why," Ethan said, his eyes glittering. They all swiveled to look at him. "Because the alternative is the purest

Visit the Sins 63 shit," Ethan said, standing up, starting to pace, almost shouting to make himself heard over the din of the ward. "Because if you have to ask, you'll never understand. Because dessert is better than dinner, because the cher-

ry on top is the best part of the sundae. Because strength is over-rated." Grampa applauded briefly, sardonically. "Because holding your nose and

taking your medicine is awful. Because boredom is a suppurating wound on the mind. Because self-discipline is over-rated. You getting all this, Sean?" But Sean was watching his father, who was staring in fascinated horror

at Grampa. Nauseous regret suffused Sean, as he saw his father's composure crumble. How many times had he tried to shatter that deadly cool? And here he'd done it. He'd really done it.

Still looking at his father, Sean said, "Do you ever wonder how it feels to rank below oblivion in someone's book?"

Grampa spread his hands on the table. "I can't help it if you take it personally."

Sean's father reeled back, and Sean swallowed a throb of anger. "Of course not, Grampa. I understand. It's a reflex. The world's full of sops who'll take offense at any little thing"-Lara shriveling under the heat of his tongue, and him still watching the TV over her shoulder-"but it's a re-

flex. It's not conscious. It's no one's fault." "Don't humor me," Grampa snapped. "I know what you all think of me. I

can feel your goddamn blame. I can't do anything about it." "You could apologize," Ethan said. Adele took his hand and wiped at her

tears with its back.

"Fuck off, zombie," Grampa said, glaring at him. Sean's father stood abruptly, "I'm glad to see you're in good health, Pop."

he said. "Sean, thanks for the ride. I guess I'll see you once vou've finished your research." His face was hard, composed, "Adele, nice to have met you."

"Likewise," Adele said. "Bye, then," Sean's father said, and walked with dignified calm to the elevator.

"Bye, Dad," Sean called softly at his retreating back.

He turned back to Grampa, but Grampa's eyes were dull, and he was methodically twitching, top-to-bottom.

"Adele," Sean said, taking her free hand.

"Yes?" she said.

"How would you and Ethan like to come to Universal with me for the afternoon?"

"I'd love to," Ethan said. Sean looked at Ethan, and couldn't decide if he was switched off or not.

Whichever, Adele didn't seem to mind, O

READERS: If you are having problems finding Asimov's Science Fiction at your favorite retailer, we want to help. First let the store manager know that you want the store to carry Asimov's. Then send us a letter or postcard telling us the full name and address of the store (with street name and number, if possible), Write to us at: Asimov's Science Fiction, Dept. NS, 6 Prowitt St., Norwalk, CT 06855-1220, Thank you!



I peek you do you peek me?

Let's lite a vid-cig smoke filled with reruns of black-and-white hits.

We could suck a tube of movie reviews colorful flashes on our retina,

Or inhale a bottle
of news bites
headlines snaking to our frontal lobes,

Why not open our spinal receivers full blast and surf 10,000 channels together,

Or shut down all input except our tongues and touch once to overload our networks.

-Linda D. Addison





Sometimes we can learn as much about a society and its people from what is left unsaid as we can from what is <u>said by</u>

LADIES IN THEIR LETTERS

lustration by David Michael Beck

ear Fumiko Nakamura.

My father suggests that I should write first, since it took such a time to sort out the transmission protocols here, and your ship can't have the facilities that Tananarive is supposed to. Then you can use the routing code for an easy reply. Once I corresponded with the niece of one of my mother's friends, who lived on the Moon, and that was simple enough (though expensive). But then the Moon is always nearby, and right now we're not even both on the same side of the Sun. And every time I write you, you shall be farther than before!

My entire Social Studies class is supposed to hear your letter, so if there is something you don't want read to a bunch of strangers you should say so right at the start, and I will hold it back. (If you are asked to share this letter with one of your classes, go ahead. Although I can't imagine what would

be so interesting about a letter from Earth; there are so many billions of us, and so few of you.)

I have put your Shipdate at the top of the letter, so you will know how long it took to reach you. I don't suppose that April 21 means much to you, since even the Lunar Satellites have no seasons. It is growing cooler in the evenings now, and the dry breezes are so pleasant that even the Government offices turn off their air conditioners and throw open their ornamental windows. But this can mean nothing to you-I keep forgetting that the habitats have no weather, either, You don't even have night and day!, except that you keep to a twenty-four-hour clock. Do you turn off your lights when you sleep?

I'm not going to tell you all about myself, since you must have gotten a "profile" of me just like I did of you. I want to go to space someday, although my parents warn me that it is even more crowded than here-all that empty volume, but people live in ceramic cans and never get away from each

other. Is that really true?

Write me when you get a chance. Do you have to pay transmit costs yourself? I'll understand if it's a short letter!

Your friend. Ranavalona Midongy

Shipday 237 (August 27)

Dear Ranavalona Midongy.

Thank you for your letter, which arrived yesterday. The five days' transit time is almost certainly due to queuing delays at this end, since the Centaur receives thousands of messages a day, of which our own correspondence certainly ranks among the least important. Your letter spent only twelve minutes in actual travel, even counting its shunting through the Trojan relays, so we are not very efficient when it comes to processing messages. You might compare us to two Earth girls living on opposite sides of the planet back when letters took weeks or even months to travel long distances.

You may be assured that we turn out our lights when we go to bed, for it would waste energy to behave otherwise. You are correct, however, in thinking that the Centaur experiences no weather, except what we program ourselves. We have a park, and although it's not large enough for actual meteorological cells like the ones on the Moon, the gardeners schedule periods of cool and warm weather, to satisfy the plants' inner clocks. Every-

where else, of course, it's always comfortable. Not much of a world, is it? (I remember reading one of your columnists, who wrote that life in the Centaur would be like spending fourteen years on an economy cruise.) On the other hand, our habitat offers the full range of gravity, and I cannot help but marvel at a great wide planet that exerts the same pull on every point. At the bottom levels of the pods-my teacher called them the Antipodes, a word I had to look up-there is full Earth gravity, while the ship's axis has a gravity of scarcely 2 percent (it's really acceleration, from the continuing faint push on the Sail). When I work in Pollux's first level-the babies and young children grow up there, so their bones and reflexes will develop properly—I find that my back aches after a few hours, and anything that slips from my tired fingers dashes itself instantly to the deck. Once I had to take some bibs to our opposite numbers in Castor—babies make an awful mess in full gravity, and the moms there had all run out—and I traveled across our entire world: up the shaft into the Rock, through its weightless center, and down Castor's shaft as gravity draped itself about me in heavy folds. Differences in scale allowed, it must have been rather like traveling from one of your poles through the temperate zones, across the hot equator and down to the opposite pole. Have you ever done that?

And technically speaking, our habitat is no longer a "can" but a "tub." It changed when the Rock became a vehicle and was sent traveling. When we reach Neptune, the two pods will detach and our ship will again become a can, indeed a rock (for cans are built), but what moves us now is the sail of cattle.

I see that I have written mainly travelogue details, rather than anything about myself. Perhaps I shall feel more forthcoming after I know more about you. A personal correspondence seems much like maneuvering in microgravity: every move must be measured, and reciprocated.

Sincerely, Fumiko Nakamura

Shipday 243

Dear Fumiko,

Tour letter arrived in four hours, but I was facing a battery of examinations, so put off replying until I had finished and regained my breath. Tomorrow morning I leave with eleven classmates to spend five days working in the maize fields of the south, so I had better write now. The work is hard on both mind and body—after you identify those rows that cannot be picked efficiently by machine or lemur, you go out and pick them yourself. Naturally these are the plants that are growing on the slopes of ravines or up a hill: more work for the pickers than the yield is worth, but student labor costs nothing. (The lemurs are little help: those stalks that are strong enough for them to climb produce ears too big for them to pick.) In fact, what miserable productivity increase our efforts produce is not worth the expense of hilleting us; it's made up with fees paid by the school district for this "educational" experience.

You want to know about me? I bet the profile already told you plenty. The Repoblika Demokratika Malagasy mandates universal education through age nineteen and does not recognize private schools, so every

Gasy my age is right where I am: in tenth levels. I have reached the age where boys are supposed to become attractive to me, but find the prospect repellent. My mother assures me that this will change by the time I'm sixteen, but that's not surprising: sixteen-year-old boys aren't too bad.

You got that picture of me, didn't you? I wanted to include one of my cat, Balthazar, but they wouldn't let me, Balthazar is a red tabby with green eyes. I have had him since I was nine. Do you have cats and dogs on the Centaur? Taking care of Balthazar is hard: his expenses eat up half my allowance (the pet tax is very high), and I have to maintain his litterbox my-self. When the unrecyclable residue gets too high, I have to take it to the mineral bank. Tell me if it's oksy to send you a hoto.

My brother Clark will take care of Balthazar while I'm gone. I'll miss him

And obviously I must be a good student, and politically acceptable, to have been chosen for this program. Can I, a model girl of my age, possess any distinctive characteristics? Well, I like French-African history, and also the poetry of that era—English poetry, too, since that is my native language. (But there's something: my great-grandparents grew up speaking only French and Malagaey. Slightly unusual even then. They speak with an

accent I've otherwise heard only on history chips.)

And I want to pilot a space freighter, preferably in the asteroids. Does

that sound exotic? Probably not to you!

Your soon to be exhausted friend, Ranavalona P.S. Much of my self-portrait no doubt describes you as well. I can imagine

P.S. Much of my self-portrait no doubt describes you as well. I can imagine what one of the class rebels (even we have some) would think of this correspondence: the dutiful exchange between goody-goodies for the edification of their classmates. Does this bother you a little?

P.P.S. I was recently reading about English poets and came across this observation, from Leigh Hunt: "It has been said of ladies when they write letters, that they put their minds in their postscripts—let out the real object of their writing, as it were a second thought, or a thing comparatively indifferent." Whatever did he mean by that?

Shipday 259 (May 19)

Dear Ranavalona,

You will probably make a splendid freighter pilot. Your apprehensions of conformity are probably well-founded, although for reasons you may not appreciate. I can only marvel that some early aptitude test didn't identify you

at once and have you swept away to the L-5 Academy.

Several weeks ago we were herded into the auditorium, where Vessarion Ai debated with an elderly architect (name frogaten) about the nature of our voyage. Ai, who was originally a planetologist, said that we were "Sailing to Neptunium," a portentous phrase whose double meaning he obviously relished. (Scientists hope to find transuranian elements in the cores of gas giants, and Neptune will be the first to be explored. Neptunium is the first transuranian, which can mean both "higher than uranium" and "beyond Uranus." He also recited bits of verse, and the architect, who talked about the poetics of space, remarked that the Japanese wrote poetry of the particular but that the English excelled in other other other other others.

own interest is the nitrogen cycle in agriculture, I spend a lot of time studying roots and don't think about poems at all.

I showed your letter to my classmates during our civics studies, and you're right, they weren't terribly interested. Most of them have received offers to correspond with someone from Earth, and of course we grew up with Earth in the sky, so its culture is not especially novel to us. One friend wondered whether you had a slate in your head. I didn't think so, but said I would ask

If there is something I do find interesting about your last letter, it's the description of your stint in the maize fields. As a (former) citizen of the Circumlunar Catena, I spent lots of time tramping around on Luna. so the sight of a horizon and open sky is not strange to me (although it might be to my children). But the idea of crops growing freely-spilling over square kilometers, being eaten by birds and insects-is so overwhelming, so inordinate, it makes me dizzy. I have seen films of great rippling plains of grain, and canopies of jungle, but cannot imagine the sounds and small of such an environment, its living immediacy. I would love to hear a description of it. Sincerely.

Fumiko Nakamura Shipday 270

Dear Fumiko,

I will try to give a vivid description of maize cultivation, since that is what interests you. As it doesn't require the flat ground of rice farming, maize is often grown on rolling land and on strips running between terraces, like a decorative hedge separating paddies. On some parts of the island, especially in the east, people still grow crops as they did in the last century, with chemical fertilizers and pesticides but no mites. In the large cities molecular technologies "grow" numerous food staples-it is called stalkless manioc," and it's actually what most people eat-but the conservative villagers and prosperous exurbanites scorn such factory fare.

So the high prices that crop foods command allow valuable land to remain under cultivation. Most of the central plateaus and western plains are planted this way, but in the wilder regions you can still find fields tilled by hand-directed tools, where wildlife and vermin try to eat the crop and uncontrolled rains can wash out a farm. And while the cultivation of hill ricecutting and burning a patch of forest before planting-has been outlawed for decades, some of the forest people still gather wild fruit, which sounds pretty atayistic. Once I went hunting for orchids in a National Park.

Harvesting maize by hand is an extraordinary chore, about as rewarding as killing a deer and cooking it. Insects buzz around your face, and you can't go inside when it rains. You may have to walk five hundred meters, much of it uphill, to find a toilet; the supervisors cheerily suggest you go behind a tree (I bet that doesn't happen in space). You get dirty and stay that way all day, even through lunch.

I bet you'll laugh if I complain about dirt under the fingernails, but it's much worse when you know you can't wash it off whenever you like. And you get sticky in the heat. Whereas you are always inside, you never get hotter than you like!

After five days you long for the clean reaches of High Earth Orbit, preferably in zero gravity. Your farms are all at the low-G levels, right? Ha!

No, I don't have a slate in my head; nobody I know does. For all that Centaurans seem to think that people on Earth are constantly tampering with their brain structure, it's the other spacers who try to augment their memories or rewrite their cognitive processes. My best friend's father is a disaster engineer, and he has his slate patched into his nervous system so that he can operate it by induction and see its display in his visual field, but it sure isn't part of his mint. For God's sake, there are twelve billion of us down here; do you think we could survive together if we didn't behave predictably?

I think that's the extent of my interesting subjects. Write again if there is

something you want to know.

Yours, Ranavalona

Shipday 270

Dear Ranavalona,

I want to apologize for the discourteous tone of my last letter. My mother says that I have been inexcusably rude to you, and I see that she is right. Please accept my apologies for my casual ignorance about your culture, and for my callous remarks about your love of poetry.

Thank you for your description of Earthside agriculture. I shall never experience an uncontrolled ecosphere, so these stories seem nearly magical. You are right that we don't have to battle insects, weather, or difficult terrain. Sometimes I lie in The Woods and try to pretend that it is a Canadian forest or the Great Siberian Preserve, but the illusion isn't easy to main-

tain.
You are also right that spacers are the biggest proponents of mindcraftting. People here sometimes speak as if Earth were all one place,
which isn't fair. Perhaps in a hundred years our descendants here will
think of everyone who lives inside the orbit of Jupiter as basically the

same. But it is possible—if you don't mind my saying so—that you have misunderstood us as well. Only part of the Centaur's inhabitants came from the dissenting faction of the Catena, although theirs is the story you always hear. The rest are scientists who want to go to Neptune, professional spaceres amoious to crew the largest tub in history, and various folks whose careers were in a rut. (A lot of them probably think they will be coming back to retire in Earthspace in thirty years, even though they were told not to count on it) There is nobedy with any cerebral modifications on this ship, but lose of the retire in Earthspace in this leave their medical clinics for the hinterlands the structure until they end up as something completely alten, or have lest the

Our teachers tell us that humans are born with animal drives—selfishness, aggression, suspicion of strangers—that no longer serve us, and must be overcome through self-knowledge and discipline. I have examined my conscience and believe that your letter prompted unworthy feelings of jeal-

ousy and superiority, which I failed to surmount.

I hope you will still be willing to correspond with me in the future.

Sincerely, Fumiko Dear Fumiko,

I almost cried when I got your letter. You don't have to apologize to me. I was afraid I had said something stupid, and that you wished you had been

given a pen pal from a bigger country. I sometimes think that I must seem just a silly kid, dreaming about space travel while you live it as a real, and dangerous, part of your every waking moment. On the other hand, if I had not known so much about space and the Centaur's voyage, I probably would not have been chosen for the correspondence program, and you would have ended up with someone who

couldn't tell you about growing maize.

The walkways outside our building are lined with flowers and shrubs that blossom twice a year. The greenery downtown is tended by machine, but here the old ladies take turns trimming the plants and pulling up "weeds," to use the word in its original meaning. I bet you have no unwant-

ed, wild species in your farms.

I will write more about whatever subject of life on Earth interests you. If you are willing to write about living aboard a ship flying through space, I would love to hear it.

Your friend, Ranavalona

TO: Taro Lindslev 2497380115463

FROM: Ranavalona Midongy 2494075395516

DATE: 04 June 2123

I would like you to convey a message to Fumiko Nakamura, who must be a classmate of yours. This would be a great favor to me, and would not implicate you in anything wrong.

Could you please ask Fumiko whether our correspondence is being read by her mother? She might not be free to reply if the answer is Yes, and it might even be that my own letters are being read. I don't mind, exactly, but

do think I have the right to know if this is so.

I cannot offer to pay for your reply-credit transfers between the Earth and the Centaur are difficult to carry out-but I can send you 18 MB of any title you want, copyright charges included. Is that fair?

Shipday 282

Dear Ranavalona,

Life aboard a ship flying through space would seem more shiplike on a freighter or liner. Indeed, I was more conscious of living in space back in the Catena: we had windows (only soldiers call them "portholes") everywhere, from which you could see the Earth, Moon, and Sun enact their stately dance. Here there are few windows, and most show only those stars lateral to our path, wheeling past just too fast to see. The corridors of the Centaur could easily run beneath any lunar city.

We also cannot see where we are headed, as the great Sail blocks our forward view. Of course, we are aiming not for Neptune but for Jupiter-or rather, where Jupiter shall be by the time we reach it. So there is nothing before us but stars, even if we could see it. We are less a spaceship than a city under sail.

Our civies class was discussing Earth today, which none of us has ever visited. Most of the students felt that your world is essentially an anarchy, for all its ancient countries and many laws. I can see why this would be so: air is free, water falls from the sky, and anyone who doesn't like their community can (in theory) leave for another one. You cannot imagine how stranger this seems to someone who grew up in the Circumlunar Catena; how stranger it seems now.

My friend Taro, who misses the comedies of Pitzyc that he used to monitor from Earth, said, "Yes, indeed" when asked whether Centaurans experience a degree of oversight and regimentation that their counterparts on Earth would find surprising. We have, after all, little private property, so no individual can hope to make himself irich by designing an irresistible blouse or cornering the market in tomatoes. Our tiny company is too small to absorb the shocks and wave fronts that roil a true society, we're really

only an outpost.

That is why it is important that we do things properly, and follow established channels rather than seek side entrances. There isn't much room here for showing off, being a rebel, or electrifying the populace. I watch the stories about Vaclav Havel or Wong Laobin and cheer their heroics, but know there is no place for that here.

So I do things properly, and don't step out of place simply as an exercise of will. Perhaps such feats are more acceptable on Earth, where the fabric of civilization has high tolerances and the environment beyond the wall won't kill you, but we live a much frailer life.

Do you understand what I'm saying?

Sincerely, Fumiko

Shipday 300 (It's winter here)

Dear Fumiko

Trecently wrote a school report on life in space habitats, and later gave a talk to a group of twelve-year-olds. One of them startled me by pointing out that children in such a society would grow up knowing everyone they would ever know—their future lovers, colleagues, their seniors and their contemporaries are all living around them. I never thought of it that way: your

husband is someone you already know; so are all your future friends. I told my teacher this, and he said that humanity had lived this way through most of its history; people lived in small villages, and knew everybody they would ever meet. But even remote villagers might one day see a stranger ride into town, while you can never meet one. Does this bother you?

I have thought about what you said in your previous letter, and see your point. Perhaps ten years after you reach Neptune, a thriving frontier will fill its space—swarming with ice miners, prospecters, and explorers trekking across Triton. The delers—your generation!—will bemoan the passing of a more civilized, crowded era. In the meantime, however, the orderliness of your present lives makes perfect sense.

derniness of your present lives makes perfect sense.

It occurred to me today that we may meet someday, thirty or more years
from now. Ships will eventually travel to Neptune, even if only infrequently. Perhaps I shall help pilot one. The thought is quite cheering.

Your friend, Ranavalona

Shipday 341

Dear Ranavalona,

Perhaps you are right that we shall someday be more like you, but the prospect seems distant. There are 741 people aboard the Centaur, 103 of them within five years of my age (I just checked). The birthrate is healthy, and will climb after the Jupiter swingby. When I am forty-five, the Centaur and its settlements will be full of interesting people in their late twenties, whom I will be teaching and supervising, plus virtually everyone now living. That's nearly a thousand people: I am sure that the pool of acquain-tances from which you will draw your future friends and colleagues is not larger, just more thinly distributed.

Before we left the Catena, a group of friends gave me a going-away present: a Moment, very tame by commercial standards, but electrifying for a first-time user. It is one set on a North American wheat field, with Barth gravity, hot wind, chirruping insects, and scudding clouds that made the intensity of sunlight dim and brighten irregularly. Eventually a great storm blew up—dropping air pressure, cozone, commous dark massings on the horizon—and broke over one with shrieks and stinging hail. It ceased after a few minutes (you could see it race on to the east), and the Moment ended

with a gorgeous sunset and the emergence of stars.

It was beautiful, and for a moment my throat swelled with the thought that the Earth, which had always seemed a place I would someday visit, would be lost to me forever. I have never experienced another Moment they are considered too seductive for adolescent nervous systems—but I sometimes lie in bed at night and recall the smell of warm soil and chaff, and wonder whether the interaction of humanity and Neptune will produce in my lifetime anything as rich and complex. Your friend.

Fumiko

Shipday 346

Dear Fumiko,

I would be happy to relate anything else you might find interesting, but my adventures in harvesting maize constitute the extent of my agriculturally experience. Tell her about the ocean. "says Clark, who came up behind me and read over my shoulder. I'm in my room now with the door closed, but the pest has a point; you have probably never seen an ocean, and we live surrounded by one.

Everyone likens the atmosphere of Jupiter to a vast ocean, and I bet they say the same thing about Neptune. (Named after a god of the sea, though not, I just discovered, because of its deep blue color.) And Europa actually has one (under all that ice), and you always read about "the ocean of space." But none of these are really oceans, at least not as people experience them.

Oceans are surfaces.

When you travel by boat beyond sight of shore and stand looking over the rail, you can experience a brief period when no other ship is visible above the horizon or in the air. Suddenly, and for anything from several seconds to a few minutes, you find yourself looking upon a pre-human world, Earth as it appeared three hundred thousand for three million) years ago. You listen to the seagulls crying, and feel the salt breeze, and if there aren't kids shouting beside you, the ship disappears beneath your feet. It is a world without people, until the drone of an aircraft brings it hack.

This probably means nothing to you; the Moon must offer a glimpse of unpeopled landscape from almost every window (I remembered not to say porthole!). But the flat wilderness is simply something you do not see on Earth except where there are no people.

It's a day later, and I am glad I did not send what I have written so far, for I have finally remembered something for you. The last night of our harvesting trip we spent singing around a campfire and roasting ears of maize. Toward the end, as the fire burned low, we sat quietly as the air cooled and the fields beyond our circle of firelight grew darker. At one point I went off for a minute, and stepped through the long shadows cast backward by my friends and into the gloom beyond. Turning back, I saw the ring of kids surrounding the fire, the illuminated disk that extended several meters beyond, and the enveloping darkness in which I now stood.

When I told Mr. Kamil, my literature teacher, that I was trying to think of an experience that I could share with you, he reminded me of the campfire story (which I had written up as a class composition). He said that in the instant I glanced back toward the firelight, I stood in the place where

you live.

Mankind inhabits just such a tiny glow, surrounded by an immensity of darkness. You are heading beyond the circle of light, to a place that seems very far from everyone else. Yet when you look past your destination into the dark fields beyond, you realize that you are only approaching their edge.

I remember the shiver I felt at that moment, at the realization that the blackness around me simply continued on and on. Am I being presumptuous to assume that you sometimes feel this way? (Don't feel shy about telling me so.) And your ship is not even resting on a surface-for you, the emptiness extends in every direction.

Later: I read again through your mission profile, and when I came to the description of how the Centaur will swing past Jupiter next year to boost velocity, and then brake upon reaching Neptune by skimming through its atmosphere, a tiny light went on inside my head. You will fly over the surface of one world's ocean, then plunge deep into the next. That's more than I can claim!

Your friend. Ranavalona

Shipday 367

Dear Ranavalona.

The Centaur will indeed plunge into Neptune's atmosphere during the Reversals, but the two pods will decelerate by more conventional means. The enormous bulk of the Rock is simply too great to slow down quickly. and it's sturdy enough to sustain deceleration forces that would kill living creatures. When the first explorers descend into the upper atmosphere, it will be under much less reckless conditions.

Some of my friends have been rebuking me for having an Earthly pen pal. which they seem to regard as a kind of disloyalty. I have told them that you do not even live on the same side of the world as the powers that are causing problems for us, and that you may well not even be aware of these troubles. It is difficult when friends do not understand.

My mother reminds me that I had earlier said that I could not imagine the sounds and smells of a wheat field, then later told you about the Moment I once experienced. She is right. I had been keeping that slightly illicit experience a secret, then (some time after she found out) mentioned it without remembering that I had earlier dissembled. You were no doubt too polite to notice.

You did not say whether your ocean excursions were on sailing wessels. I assume not, since the encyclopedia reports that sailboat are now used only as pleasure craft. Our own Sail now contributes only slightly to our velocity, though everything helps. But we will redeploy it after Jupiter, out of tradition and loyalty. We are sailors, and know well how many are not.

Your friend, Fumiko

Shipday 397

Dear Fumiko,

I actually have sailed, though not (as you guessed) during our class excursion offshore. Lake Kinkony has small-craft sailing, although one must wait months for a reservation, and I only spent one aftermoon on the water. I won my berth by placing in a science fair! Less ingratiating kids must still be waiting their turn.

be wanting their turn.
I'll tell you about that if you're interested, though I never thought to compare it to any kind of space flight. (The most thrilling moment is when a stiff breeze hits the sail—you can hear the smack—and the boat surges forward. If the massive Centaur were as subject to its winds as a catamaran,

you would live in constant terror.)
We are studying settler populations in history (as opposed to prehistory, when most migrations took place), and I was assigned the first European settlement of Greenland, the Norse colony that died out. It would have been more fun to study the European settlement of North America or the Sulamericanos on Mars, but other kids got them. I began reading about the second European settlement of Greenland, the one that began the century after the Norsemen disappeared. I watched all of Frobisher Strati, since it was in English (very funny-sounding English). I read a great book about attempts to cross the Greenland ice sheet in the eighteenth and inseteenth

centuries. Finally I got serious and went back to the year 986, when Eirik the Red led twenty-five boatloads of settlers from Icaland to Greenland. Do you know the story? Eirik was banished from Iceland, so he sailed off and discovered a much larger country. He named it "Greenland" to make it sound enticing, but it's almost entirely covered with ice. Fourteen of the ships made it.—it wasn't a terribly long journey, but the waters were tread-erous—with six or seven hundred settlers. They established settlements that lasted for five-hundred years, then dwindled and died out.

Eirik can be called a political refugee if you're willing to stretch matters (keatually seems to have been banished for fighting too much), but his colonists were evidently lured by the attraction of unsettled lands. (I was hoping for colonists who had left home for political reasons, like the Pilgrims on the Mayflower) It's all very interesting, but I was more drawn to the story of Major Paars, Greenland's first (and only) military governor. He was sent in 1727 to establish a Danish colony on Greenland, for which purpose he brought twelve convicts who had been forced to marry twelve women from a house of correction. (How that's for political!) Paars wanted to discover any remnants of the Norse settlements on Greenland's east coast, which was inaccessible from the sea because of pack ice. Since Frobisher Strait turned out not to exist, he decided to march his colonists across the ice sheet.

You should read the account, It certainly suggests that colonists do bet-

ter as banished refugees than under military authority! It would be 160 years before anyone did succeed in crossing the ice sheet, and it turns out that the Norsemen had never settled the east coast anyway.

I don't know why this fascinates me; maybe it's because of the cold. It

rever gets cold in Malagasy. And Triton is the coldest place in the solar system!

Your friend, Ranavalona

PS I bet you have never read *The Container Kids*, a series of kids' books about a family of Tanzanian children who live in a beached container from an old cargo ship. The series is nearly a hundred years old, and it's based loved them for a peculiar reason; the kids all had bothers and sisters, and of course no one gets to have both any more. Liked to pretend I had a sister, just a few months younger than me. (I didn't realize that wasn't really possible.) Do all girls feel this way?

Shipday 426

Dear Fumiko,

I read through my last letter to see what I had written that might have offended you. If made me wince, but I saw nothing to give offense, and I am sorry if I nevertheless did.

I showed the letter to my teacher, who said that my chatter about the Greenland settlements was really about Neptune. Her actual words were, "For heaven's sake, Rana! 'Green Land'?" Maybe you thought so, too. I only

meant to talk about sailing.

Perhaps you are just too busy to write, which I can readily understand. We are told to study hard or we won't get into a good college. I doubt that you have this problem on the *Centaur*, but I'm sure there are similar pressures.

I hope things are going well.

Your friend, Ranavalona

Shipday 662

Dear Pumiko, Father says that no letters will get through for days, but I must ask whether you are all right. The first reports were so awful I just sat and cried, but now they are saying that actual loss of life was small, and I am wild with hope.

You never told me what level you actually worked in, but I've compared the images of the disaster area against a detailed map of the Centaur, and the horticultural spaces don't seem to be nearby.—But I have just spoken with my father, who reminded me that the spaces within the ship can be changed easily, especially in anticipation of a course change. So I can be cer-

I can't imagine you having time to write to me. I am watching the news, vearning and dreading to hear your name mentioned. Please know that my feelings are with you.

Your friend. Ranavalona Shipday 669

Dear Fumiko.

The Centaur is once more accepting transmissions, so I am going to write this, even if it sits in a queue for a long time before you receive it. I know you aren't able to send a letter-probably don't even have the leisure to write one.

We have gotten pretty complete reports over the past few days, so you don't have to tell me what happened. I also know that you must be all right, because SpaceNet said that there were few casualties, and would have mentioned if one of them had been a teenaged girl.

How important is the tokamak, anyway? The news says that you have enough redundant energy systems to last throughout the voyage, even if it takes as long as they're now saying. Yesterday I watched a senator on the Science Committee explain that energy could also be beamed to the ship, even though it becomes very expensive at this distance, and that a fast rocket could be dispatched with another reactor if lives were really in danger.

Last week Clark fell off the roof of our house. The walkway went soft on impact, but he still chipped his jawbone and bruised a lot of tissue, so that even after the mechs went through him he was swollen and badly discolored. I cried for so long that my parents are making me talk to an Auditor. Mostly it just asks questions, but I can tell that it thinks I am upset over you. I've never had a friend in danger before, and there's nothing I can do.

My best wishes cross space toward you.

Your friend. Ranavalona

Shipday 724

Dear Fumiko.

They're now saying four extra years, assuming no further damage to your systems. I can't believe such calamitous results from a collapsed wall.

The Catena issued a report on the Centaur's energy supply, which concludes that you will have enough if you adopt "economies." What on earth does that mean? Corinne Kwajalein (my favorite science reporter) says that this apparently includes deferring some of the most expensive reconstruc-

tion, and controlling energy expenditures for the rest of the voyage. I don't really understand this. Does this mean that you will have to turn your lights out a half hour earlier, cut down needless travel, stop wasting

Lodies in Their Letters

water? That's what happens in Africa during energy audits, but I don't know how that would apply to a spaceship. My father says that the Centaur has great emergency reserves, and will simply "tighten their belts." Do you understand that metaphor? If you wear too much belt in full gravity, your pants fall down.

If any activity on the Centaur could be classified a luxury, it would be sending mail to Earthspace. I understand that you may not be able to write

back for a long time.

You will be nearly thirty when you reach Neptune orbit! Spending half your life en route was bad enough. At least you can do much of your work while still vovaging; I can't imagine what the planetologists must feel.

I know you don't like poetry much, but I thought of you when I read this:

Dropped into the Ether Acre-Wearing the Sod Gown-Riding over Endless Blue-The small Sun-shines upon-

Coach of Stone-and Amethyst-Its wheels spin on Air-My seat unshared, but deeply worn Many precede me-here-

Swiftly borne toward the Manse Its vaults-Geometry-Years of waiting shrink to a point-From Matter now I fly-

I'll keep this short. Hope you are well.

Your caring friend, Ranavalona

Shipday 839

Dear Fumiko.

There is a network of people who correspond regularly with someone aboard the Centaur (perhaps some only claim to), whose chatter and comparings of notes can be read, though not joined, by anyone who knows where to look. I have never connected with this slightly foolish group-it would seem like trading upon our acquaintance—but my worries over your continued silence drove me finally to look them up. I'm not sure how great a shock it was to discover that transmissions from the Centaur had resumed some weeks ago; I had probably been steeling myself for such news without knowing it. I did confirm that sending mail from the Centaur is now a rationed luxury, but that reading a received letter costs only a fraction as much energy. It would have hurt more to learn that you had never got my notes.

That was more than a month ago, and I have had much to concern me. The end of the school year is five weeks away, and if I do well enough on my exams I will qualify for an internship at the Iringa Space Center. The work is more administrative than technical, but the trip there is by sub-orbital shuttle, a loft into true space complete with vacuum, visible curvature, and a few minutes' weightlessness. I'm sure it seems laughable to you, but I'm thrilled

Next year a solar eclipse will race across the South Indian Ocean, although only its northern fringe will brush us. I imagine what it would look like from cislunar space: a deep bruise darkening a quadrant of Earth. Will Triton eclipse Neptune in your sky? In a sense, I guess: virtually every eclipse would be total, but they will be too dim to notice.

I gather that life on the Centaur is going to be more difficult now. You have my sympathy.

Sincerely, Ranavalona

TO: Fumiko Nakamura 2502329410774

FROM: Ranavalona Midongy 2494075395516 DATE: 13 October 2127

"Hello, Fumiko. Interesting to be talking to you at last. Did you ever hear the sound of my voice? I can't remember what those old profiles included.

"It's amazing that we were supposed simply to write letters to each other, wasn't it? I know it kept the data stream way down, but I'm sure that wasn't the real reason. Discipline, presumably: writing is more like work. Nev-

er occurred to me to question it. "And here I am, a good little worker who has passed her exams and can now apply with confidence to the off-Earth institutes. Pardon my diction:

I'm a little drunk tonight.

"I thought of you this afternoon, for no particular reason I could make out. Then about an hour ago, as I was talking to my roommate, I remembered: Years ago, I had imagined this day, and had looked forward to telling

you about it. Pretty pathetic, eh! "What became of you, anyway? Fall off the edge of the world? Excuse

me. I used to rack my young brains, wondering what I had said to make you drop me without a word. That was cruel, do you know that? I didn't realize it at the time-I was just a little budget of pain, tied up with guilt-but it was just mean, now that I look back. People don't do that to other people. "Have you ever been drunk? Somehow you never seemed the type. I've

only done it once before, and I didn't remember anything afterward; I had to come across my drunken journal entry to realize it had happened. Embarrassing. There are pills to take beforehand, but I hadn't planned

ahead-and didn't tonight, either. Some things one just doesn't.

"I wonder if you'll even listen to this. Actually, you probably will—the accept charges can't be much, and I'll bet it piques your curiosity, getting a fat

file from me after all these years. No, I won't be looking for a reply. "I stopped following news of the Centaur a few years back, but of course people here-I'm sorry, I forgot to say that I have been spending a term in Antananariyo studying astronautics. I wouldn't be getting drunk at home! Anyway, while here I have had to keep up with developments in space, so I've heard about the Centaur. You guys are having a miserable time, aren't

"When I was twelve I gave a piece of my heart to someone I would never see, who was receding from me at planetary speeds. So she took it and kept on going, having prudently kept her own intact. And here I am years later,

vou?

with that tiny piece still missing. When I've grown up, the missing piece will be too small to feel.

"And you couldn't give it back now if you wanted, could you? No, you threw it away.

"One button to Send, the other to Delete, Which one should I nush?"

Shipday 2411

Dear Fumiko.

The protocol I set up for writing to you is still keeping Shiptime, I see.

Here it's April 10

The Nairobi Astrotechnic Institute, where I have been studying for the past two years, is close enough to the equator to offer something that few spacers would think to imagine: an emergency landing strip for disabled spaceraft. It's over six kinometers long and utterly flat. Twice in the past ten years it has served as runway for orbital vessels falling slantwise out of the sky. Staring at it yesterfayl, I reflected how alien it would seem to a born spacer, for whom distressed ships usually crash or fly off into the void. Some chain of association led me to think of vou.

For the past few weeks I have been following the news about the Suncatcher prototype, which can gather hydrogen ions from the solar wind like a fisherman's net. Since free hydrogen is so scarce in the inner system, the prospect of skimming it from sunlight has everyone excited, especially the Lunies. Creating water in quantity from inner system resources could significantly alter the solar economy.

This may shift attention away from the outer planets—I don't know. Certainly the major export the Greater Jovian has to offer is water ice. On the other hand, a richer Earthspace could mean greater deep system exploration

In any event, the *Centaur* has not received a lot of attention in recent years, I no longer get asked if I still have my pen pal from the Neptune ship.

Making it to space seems a further goal today than it had five years ago. I am getting good grades, but the competition may be simply too great. Nearly half of all pilots are born in space, despite the fact that Earthies make up well over 99 percent of humanity. The Catena and most of the habitats are conspicuous in preferring their own people for such positions. And it isn't hard to notice that most orbital societies regard Earthies with intimidated contempt.

Were those your feelings, in part? I guess I'll never know. Here, at the equator, I am moving as fast as anyone on Earth. Spaceports gird the world's middle, deploying its rotational energy to fling ships into the sky. It is the bottommost rune of a very long ladder.

Are you at the top of this ladder, or off it entirely? Did it bore you, looking back, or was it painful? Do you sometimes worry you are lost to humanity, a spark flying up in the cool air of night? O





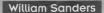
CURSE OF THE INCUBUS' WIFE

In the darkest hours of time and space he comes to her bed, a man-youth so beautiful in form, so sensuous in the shades that shift across his perfect face, that she must succumb over and again to her own disgrace.

She grows paler though no less beautiful. She becomes thinner yet all the more agile as she surely learns to imitate his inhuman grace. She wastes away near to nothing before her heart expires in their shared embrace.

Now she joins him on his nightly race. Beautiful in form. Sensuous and base. A Demon Initiate of the First Order. A succubus traveling from bed to bed, ménage à trois, in the darkest hours of time and space.

-Bruce Boston



One of William Sanders most recent stories for Asimov's, "The Undiscovered" (March 1997), was a finalist for the Nebula and the Hugo awards and the winner of the Sidewise Award for Best Short Form Alternate History. His new tale takes a disturbing look at a famous outlaw and some...

DIRTY LITTLE COWARDS

Ithustration by Shirley Chan

he client said, "Should I go on down there and, uh, get undressed?" "You might want to wait," Allison told him. "They're not quite ready

yet." "All right," the client said. "Whatever you say."

"It's just that, you might have noticed, it's pretty cool in here," Allison

said. "Have to keep it that way. The equipment, you know." "Yes." The client nodded. "It is a little chilly."

Actually there was a visible sheen of sweat on his face, but that almost certainly had nothing to do with the temperature.

"They'll let us know when it's time," Allison assured him. "Won't be long now "

At the other end of the main control console, the man named Burns silently damned Allison for a mealy-mouthed fool. It wasn't going to hurt this overprivileged jackoff to stand around the tank room naked and shivering for a few extra minutes. Now he'd be hanging out in here, asking questions and generally being a pain in the ass, for that much longer. Trust Allison, though, to suck up to the clients.

"I have to admit I'm a little nervous," the client admitted in a voice that suggested in fact he was a lot nervous. He rubbed his hands together and then shoved them deep into the pockets of his expensive-looking gray suit.

He was a medium-sized man, a little on the short side; Burns, remembering the TV and netzine shots of a decade or so ago, had thought he'd be bigger. But then the pictures hadn't been very clear, or given much time, the news people no doubt figuring that the public wasn't interested in yet another incomprehensible financial scandal. Considering how he'd gotten away with it, they must have been right.

He looked no older than thirty-five or forty, though Burns knew he had to be well past that bracket. His thick dark wavy hair showed no gray, and his wide evenly tanned face was without lines or wrinkles. That didn't mean anything, though. Nowadays people wore the faces and bodies they

could afford.

And it went without saving that this one could afford plenty; otherwise he wouldn't be here. There were very few people in the country who could pay for a private timetap, even the ordinary passive—and legal—variety, As for the kind of specialized service Mr. Tedesco offered his clients . . .

The door from the hallway slid open and a stocky dark-faced man, dressed in white coveralls, stepped into the control room. "Devereaux," Alli-

son greeted him. "I believe vou've met--"

"Yeah." Devereaux nodded perfunctorily in the client's direction without really looking at him. "They in yet?" he asked Burns.

Burns shook his head. "Should be any minute."

Almost immediately the speaker on the wall said, "Control, this is Projection. We have a tap."

"Ah," Allison said, "Here we go."

He touched a couple of keys. One of the two big viewscreens mounted above the console came to blurry black-and-gray life, quickly resolving into a view of a good-sized room, rather plainly appointed, where a number of people were seating themselves at a long table.

St. Joseph, Missouri. Monday morning, April third, eighteen eighty-two.

Like to take a look?" Allison asked.

The client moved eagerly to stand beside Allison, watching the screen, where the picture was now panning from right to left, giving glimpses of a couple of young boys and then a middle-aged woman in a high-collared dress, before settling on a gaunt bearded man who sat at the head of the table, "My God," the client said, "it's him, isn't it?" The bearded man's lips moved. The picture blurred again, cleared briefly

in a close-up of a blue-patterned plate on a plain white surface, and then suddenly went black, Allison said, "Shit!" and Devereaux said, "What the

The client bent forward, staring at the darkened screen, "What's wrong?" His voice had gone up almost an octave.

Burns was studying the bank of instruments next to the screen, "Let's have the sound," he told Allison.

Allison touched another key and a high nasal voice filled the room: "-we give thanks for the food with which you have blessed us-"

"It would appear," Burns said dryly, "that our man has merely bowed his head and closed his eyes."

"-in Jesus' name, amen." The screen lit up again and the voice added.

"Zee, would you pass the biscuits, please?"

"Praying," Allison said. "I'll be damned. Guy kills people, holds up banks and trains, but he says prayers at the breakfast table righteous as you please. How about that?"

The client was still staring at the screen, which now showed food being

loaded onto a plate. He said, "Could you show him again?"

Devereaux snorted, Burns said, "This isn't a TV show, What you see on that screen is what the host sees, nothing more or less. We have no control over what he chooses to look at."

"Not until we have an active tap," Allison added.

"Oh. Right, Sorry," The client flushed slightly, "Mr. Tedesco explained all

that. I don't know what I was thinking." The bearded man was on screen again, seeming to look directly at them. He had deep-set eyes and a keen, rather disturbing gaze. "More gravy?" he

asked. Another voice, male and deeper, replied from somewhere outside the host's field of vision: "Thanks, Jesse, don't mind if we do. Do we, Bob?"

Burns pushed himself back from the console and swung around in his chair, "Better get on down there," he advised the client,

"Yes." The client, however, made no move to leave. "Uh, does anyone ever,

well-" He cleared his throat, "You know, Not make it back."

Burns sighed, "There's no question of 'making it back," he said patiently. "Remember, you're not actually going anywhere. You'll be right down the hall, in the tank, the whole time. I'm sure Mr. Tedesco went over this with vou.

"Well, sure." The client made a fidgety face. "I know I don't go anywhere physically. But my mind, my identity, is going to be off in the past, well over

a century before I was born-"

We don't really know that," Allison interjected. "It may be a telepathic link of some sort. Nobody really knows how it works. "Whatever," The client waved an impatient hand, "I'm going to be inside

the host's head, right? I'm going to be taking over Robert Ford's mind and body, for a little time, I'll be him."

"What you're asking," Burns said, "is what if the host gets killed while

you're still on tap." The client nodded, Burns said, "Then the answer is, we don't know, It's never happened, here or anywhere else. And we go to great lengths to make sure it doesn't happen. That's why we'll be monitoring vital signs, ready to yank you out if anything goes wrong." He indicated Devereaux with a tilt of his head "That's also why you'll have backun along"

"Anyway," Allison put in, "there's nothing to worry about in this case. Nothing's going to happen to your host, because history records that noth-

ing did. Not on this particular day."

That, Burns thought, was a neat bit of reassuring rubber-science bullshit. Maybe the past was nailed down and maybe it wasn't; there were people ready to argue either way—but so far nobody had been crazy enough to take a pry-bar to history in order to find out. In fact that was the best single reason for protecting the client at all costs: lose the poor bastard back there, and you might somehow lose yourself and your whole evorld as well.

The client continued to stand there, looking unhappy. "I tell you what," Burns said, thinking screw this. "If you don't want to do it, it's not too late to

cancel. Just say the word."

He gestured at the screen. "Or we can do a regular passive tap, if you like. Instead of going into the tank, you can go to the VR room and put on the helmet, and we'll jack you through to Projection. You'll get almost the same trip—see everything the host sees, hear everything he hears, experience almost all his sensations. No risk at all," Burns said, keeping his voice absolutely neutral. "Elderly history professors and wimpy little graduate students do it all the time. If se ven legal."

He folded his arms and stared at the client. "Of course, you'll only be an

observer, along for the ride. At the end, you still won't know what it's really like to do it. Will you?"

For a moment Burns thought he'd blown it, pushed too hard. The client's face went red and then pale. But then he said, "You're right." His head moved in a jerky nod. "Not much point in doing it, really, if there's no risk."

He turned toward the door. Halfway there he paused and looked once more at the bearded man on the viewscreen. "You know." he said, "Tve al-

ways felt a certain kinship with him."

When the door closed behind the client Burns said, "Sure. He made his

pile ripping off banks, too."

Devereaux was laughing soundlessly, his shoulders shaking. Allison let out his breath with a soft whistling sound. "Burns, you crazy son of a bitch. One of these days you'll give a client too much shit and he'll walk. Then you'll be doing some walking of your own, while Mr. Tedesco makes sure you never work in timetaps again. What then?"

He gave Burns a mean little grin. "You won't like unemployment. They

work your ass off in those compulsory labor camps."

Devereaux came across the room and studied the big screen, where the bearded man was now ladding something onto his plate.

"So that's Jesse James" he mused "Bad-looking mother. You know I

"So that's Jesse James," he mused. "Bad-looking mother. You know, I never pictured him with a beard."

"He may have grown it as a disguise," Burns said, "He was doing that sort

of thing at the time. Calling himself Thomas Howard, and the like."

"You've got to quit letting the clients get to you," Allison said to Burns. "I know they can drive you crazy. Like this one Mr. Tedesco told me about, wanted to do Jack the Ripper. Mr. Tedesco said he must have talked for an hour, going over it again and again, explaining all the different reasons it couldn't be done-starting with the basic impossibility of tapping a host who's never been identified-"

They still don't know who old Jack was, huh?" Devereaux asked.

Allison shook his head. "Besides, there are no really accurate time-andplace coordinates for any of his murders. Anyway," he said, "at the end, all this silly asshole said was, 'All right, how much is it going to cost me?'"

Burns was watching one of the secondary monitor screens, which showed a not very clear view of the tank room. The client was standing beside one of the tanks, unbuttoning his shirt. A coverall-clad attendant stood by, holding the suit jacket, waiting for the rest. "Looks like he's going through with it." Burns remarked.

"Sure. With the money he's put down for this little adventure, he's not go-

ing to back out now, Mr. Tedesco doesn't give refunds."

Allison shook his head again, more slowly. "Why do they do it?" he said, surprising Burns, "Guys like this-" He jerked a thumb at the monitor, where the client could now be seen peeling off his underwear. "They've got the brains to make the big scores, money to do anything they want. Wouldn't you think they could find something smarter to do?"

"It's the rush," Burns said. "The rush they hope they'll get from doing something clear off the normal scale. They're already at the top of whatever they do professionally, so there's not much of the old rush left there. And they've already tried just about everything else they ever wondered about."

"You ask me," Devereaux said, "they're trying to prove how long their dicks are."

"That too," Burns agreed.

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The tank-room monitor screen now showed a nude figure struggling into a shiny one-piece suit, aided by a couple of attendants. "Well," Allison said, "it's their money. If it was me, though, I sure as hell

wouldn't waste it playing cowboys. If I could afford to spring for a private timetan. I'd tan Jack Kennedy while he was screwing Marilyn Monroe."

Burns winced. Even Allison ought to know better-

"Control," the speaker called, "this is Projection. We have acquired backup tap. Repeat, we have backup tap." The second big viewscreen lit up, displaying a picture almost identical to

the first, except that the viewpoint appeared to be a meter to the right and a little lower. Devereaux said, "Okay, time to do it," and headed for the door.

When he was gone Burns said, "Damn it, Allison, don't ever mention Kennedy in front of Devereaux."

"Because of Dallas? For God's sake," Allison said irritably, "I'm getting so

tired of that shit. Whatever he did in Dallas-"What Devereaux did in Dallas," Burns said in a hard flat voice, "was what had to be done. The client flipped out, the hit was falling apart, maybe the whole world was about to come unwrapped, who knows? All right,

things got messy, there were some tracks that didn't get cleaned up. I'm telling you, Devereaux did what had to be done. You weren't there, You weren't even here." He picked up his headset and slipped it on, shutting out any reply. After a moment Allison shrugged and put on his own headset, switching off the

speaker. He could speak to Burns now, via the headset's built-in microphone, but he made no attempt to do so. There was no time left for conversation anyway. Down in the tank room

William Sanders

the attendants were fitting the bulbous black helmet over the client's head, while over by the second tank Devereaux was suiting up unassisted. Burns watched the monitor as both men, now indistinguishably suited and helmeted, climbed into their tanks and were sealed in. Now the attendants busied themselves at the control panels on the wall.

There was a quick loud beep in the headset and the instrument panel between the main viewscreens began to come alive with flickering digital readouts. Burns studied the display for a couple of minutes and then keyed his microphone. "Control to Projection," he said. "Okay to activate backup."

He watched Devereaux's display carefully---you always sent the backup man through first, just in case there was something nasty and unprecedented waiting back down the line; if anything ever did go wrong, it was understood that the backup man was more expendable than the client-until the voice in the headset said. "Projection to Control. Backup tap now active." Burns waited. After a moment the view on the right screen dropped sud-

denly to the tablecloth, and a quick barking cough sounded in the headset.

Jesse James's voice said, "You all right, Charlie?"

"Backup confirms control," Burns said into the mike. "Send in the client." He expected the readouts to go momentarily crazy—they usually did on insertion—but the bounce, when it came, wasn't as big as he'd anticipated. No doubt this particular host was almost as shit-scared as the client, Looking at Jesse James's restless wary eyes, Burns couldn't blame either of them. He had to wait several long seconds before the client remembered to raise his hand-or rather the host's-and scratch his nose, in the prearranged signal confirming he had control of the host's body.

"I swear," Jesse James commented, "you two been as jumpy as a couple

of old cats this morning. Didn't you get enough sleep?"

The James family appeared to be almost done with breakfast. Country people, brought up to the rhythms of farm life, they wouldn't be inclined to dawdle over the morning table, never mind that the head of the household was now in a line of work with more flexible hours. Allison said, "Looks like we cut this one pretty close." He glanced up at the twin clock readouts-nowtime and taptime-and then at Burns. "Should have started sooner.1

Burns didn't reply. Maybe Allison was right, but it didn't matter now. Besides, given the duration limits on an active tap—the record so far was a little under an hour, but nobody was going to risk taking a client anywhere near maximum-vou always had to shave the timing on the thin side. There would be unimaginable hell to pay if a client found himself being

jerked out of tap just before the big moment.

At the head of the table Jesse James rose to his feet, "Mighty good breakfast, Zee," he said to the woman. "Bob, Charlie, let's go into the front room.

We need to talk some business."

The client's readout numbers danced frantically, pulse and blood pressure climbing almost to danger levels, as the three men went into the next room. At least the client didn't seem to be having any trouble controlling the

host body. It helped that he and Robert Ford were close in height and build. Devereaux's display hardly flickered.

The front room evidently served a dual function of living room and spare bedroom; there were several chairs and the usual pictures and ornaments of a nineteenth-century parlor, but a small bed or cot stood against one he said. "Sure is hot, ain't it?"

wall. It was a close, stuffy place, and as Jesse closed the door behind them

He shrugged out of his jacket, revealing a pair of holstered revolvers hanging from a wide leather belt. "Now about that bank in Platte City," he began, and turned to hang the jacket over the back of a chair. "Frank thinks we ought to ride over there tomorrow and—"

He paused, staring at the far wall of the room, where a large framed print of a black race horse was hung. "Damn," he said, "that picture's all dusty.

Hold on."

Picking up a large feather duster from a corner shelf, he started to cross the room. Then he stopped, peering out the windows at the dusty street outside. There was no one in sight, but he said uneasily. "Somebody could see me from out there, couldn't they? I'm trying to lay low these days, since the sovernor put out that reward on me."

He began unbuckling his gunbelt. "Better not give them anything to talk about," he said. "Don't need folks around here wondering what kind of man

wears his guns inside his own house."

He laid the gunbelt carefully on the bed, leaving the pistols in their holsters, and turned back to recover the feather duster. "This'll just take a minute," he said apologetically. "I'm awful fond of that picture. Had me a horse like that, no law could catch me."

But the picture hung too high on the wall, and after a couple of ineffective dabs with the duster he pulled up a chair and climbed onto it, standing with his back to the room, flicking the duster through fussy little arcs.

"Looks crooked," he muttered.

"Looks crooked," he muttered.

The client stood rooted in place; he hadn't moved since entering the room.

Christ, Burns thought, don't freeze, you dumb son of a bitch, you've been through this a dozen times on the VR simulator, you know exactly what to

The view on the client's screen tilted slightly for a second, while his display registered a small sharp pain spike. Burns guessed Devereaux had kicked him. A moment later he began to move, appearing a the edge of Devereaux's field of view, taking slow weird sleepwalker steps. He did have his sun in his hand, thought hat was something.

nis gun in his hand, though; that was something.

Up on his chair, desse James had tucked his duster under one arm and
was now fiddling with the picture, evidently trying to make it hang properly. "Say," he said without looking around, "does this look straight to
von!"

A couple of meters behind him, the client was raising Robert Ford's heavy revolver, holding it out at arm's length as if on a target range. His face was absolutely white. Beside the screen, the digital display seemed on the verge of meltdown.

"Uh oh," Allison said softly.

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The big, 45 came into view at the bottom of the client's screen. It was wobbling like a leaf in a windstorm. The hammer was already all the way back; a wonder the idiot hadn't shot himself in the foot. As the client struggled to steady the crude sights on the man on the chair, Burns felt a chilly

sinking sensation.
"He's losing it." Allison said. "He's going to blow it."

Up on his chair Jesse James said, "Didn't you boys hear me? I said, does this look straight to you? I can't tell from up here."

Any moment, Burns realized, the outlaw was going to turn around, and

then it would all go to shit. "Shoot," he whispered uselessly. "God damn it, shoot."

"What in the hell?" Jesse's head began to turn. "What's wrong with you two this morning?'

"That's it," Allison said.

There was a big loud boom in the headset. Jesse James stopped moving. The duster fell to the floor. His feet took a couple of aimless little half steps and then he toppled off the chair and crashed to the floor and lay still.

"Back of the head," Allison observed. "Right behind the ear. Damn, I wish

I could shoot like Devereaux."

The client was still holding the unfired revolver out in front of him. His mouth hung open; his eyes were huge. He seemed not to notice as Devereaux carefully but quickly took the gun from his hand. "Did I do it?" he asked in a high childish voice, "I did it, didn't I?"

"You did it." Devereaux was now pushing the butt of Charles Ford's stillsmoking Colt into the client's unresisting hand. "Now we've got to get out of

"I did it," the client said wonderingly. "I did it. I shot Jesse James." From the next room came the sounds of cries and running feet. Burns hit

the microphone key. "Control to Projection," he said. "Extract client and backup, and terminate taps."

Projection came back in less than a minute: "Client and backup recovered." Both viewscreens went blank and Projection added, "Taps terminated. All systems clear."

Burns started to remove his headset, remembered, and keyed the tank room. "Hey," he said, and on the monitor screen the attendants turned to

look toward the camera. "Take Devereaux out of there," he told them, "and

give him time to get away before the client comes out." He pulled off the headset and tossed it on top of the console. Allison was already punching keys and flipping switches, shutting down the various systems, and Burns joined in. "Jesus," Allison said, "what a mess that was." Burns shrugged. "It's over. Another day's work.

"And one we'll never have to do again. That's one good thing about this

job, isn't it? They're all one-time operations. You never have to repeat, because it's impossible."

He stood up and stretched, "Of course that little fact is also going to put us both out of work one of these days. We've sure used up a lot of the big hits," he said, "Unless somebody finds a way to extend the range farther back.

"They will." Burns said, "After all, ten years ago the maximum range for

a tap was twenty-four hours. It was just a curiosity."

Thope you're right. Even another fifty years would bring in a bunch of

good ones. Mr. Tedesco says he gets approached all the time, guys wanting to reserve the Lincoln hit.

Allison laughed, "Could get pretty strange, though, if they stretch it back too far. What if some day we have to do Julius Caesar? Can Devereaux

speak Latin?" Burns turned off the last switch, checked the console once more, and stood up. "I'm out of here," he announced.

"Not waiting for the client?" Allison asked as they walked toward the door, "First Devereaux, now you. He's going to be very disappointed."

"I'm sure you'll console him."

"Hey," Allison said, "somebody's damn well got to do it. Right now he's still in shock-he sort of believes he did the hit, but he doesn't really have a handle on it. Somebody has to do some stroking, settle him down, make sure he leaves here absolutely convinced that he killed Jesse James. Otherwise maybe his rich buddies hear him voice a certain dissatisfaction with Mr. Tedesco's services, and that won't do at all."

"Uh huh," Burns said, pushing open the door, "But that's not the only rea-

son, is it?"

"Hell, no." Allison said calmly, "It's a chance to do some cultivating and bonding. What's wrong with that? The client may be an asshole, but he's an asshole with money and power. I don't plan to do this shit for the rest of my life."

Out in the corridor Burns said, "Well, don't stay up too late drinking with the client and telling him what a hero he is. We've got another job coming up next week, and we need to start working on the program tomorrow." So soon?" Allison groaned. "I was hoping to get a little time off. What's

this one?"

"New York," Burns said, locking the control-room door. "Guy named Malcolm X."

"Really?" Allison's forehead furrowed. "I thought we already did him. Last month, wasn't it?" "You're thinking of the other one," Burns told him. "In Memphis."



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The WEDDING ALBUM

David Marusek remarks, "The next time you're in London, be sure to visit the Geffrye Museum. There you will experience authentically recreated rooms from houses that date from Shakespeare's time to the 1950s. These rooms are decorated with genuine period furniture, appliances, and wall and floor coverings. It's truly like walking through time. All that's missing are period hosts to greet you." In his chilling new tale,

the author provides even that.



nne and Benjamin stood stock still, as instructed, close but not touching, while the simographer adjusted her apparatus, set its timer, and were to think only happy happy thoughts. ducked out of the room. It would take only a moment, she said. They

For once in her life, Anne was unconditionally happy, and everything around her made her happier; her gown, which had been her grandmother's; the wedding ring (how cold it had felt when Benjamin first slipped it on her finger!); her clutch bouquet of forget-me-nots and buttercups; Benjamin himself, close beside her in his charcoal grey tux and pink carnation. He who so despised ritual but was a good sport. His cheeks were pink, too. and his eyes sparkled with some wolfish fantasy. "Come here," he whispered. Anne shushed him: you weren't supposed to talk or touch during a casting; it could spoil the sims, "I can't wait," he whispered, "this is taking too long." And it did seem longer than usual, but this was a professional simulacrum, not some homemade snapshot.

They were posed at the street end of the living room, next to the table piled with brightly wrapped gifts. This was Benjamin's townhouse; she had barely moved in. All her treasures were still in shipping shells in the basement, except for the few pieces she'd managed to have unpacked; the oak refectory table and chairs, the sixteenth-century French armoire, the cherry wood chifforobe, the tea table with inlaid top, the silvered mirror over the fire surround. Of course, her antiques clashed with Benjamin's contemporary-and rather common-decor, but he had promised her the whole

house to redo as she saw fit. A whole house!

"How about a kiss?" whispered Benjamin. Anne smiled but shook her head; there'd be plenty of time later for that

sort of thing. Suddenly, a head wearing wraparound goggles poked through the wall

and quickly surveyed the room. "Hey, you," it said to them,

"Is that our simographer?" Benjamin said. The head spoke into a cheek mike, "This one's the keeper," and withdrew

as suddenly as it had appeared.

"Did the simographer just pop her head in through the wall?" said Beniamin.

"I think so," said Anne, though it made no sense.

"I'll just see what's up," said Benjamin, breaking his pose. He went to the

door but could not grasp its handle.

Music began to play outside, and Anne went to the window. Her view of the garden below was blocked by the blue-and-white-striped canopy they had rented, but she could clearly hear the clink of flatware on china, laughter, and the musicians playing a waltz. "They're starting without us." she said, happily amazed.

"They're just warming up," said Benjamin.

"No, they're not. That's the first waltz, I picked it myself."

"So let's waltz," Benjamin said and reached for her. But his arms passed through her in a flash of pixelated noise. He frowned and examined his hands.

Anne hardly noticed. Nothing could diminish her happiness. She was drawn to the table of wedding gifts. Of all the gifts, there was only one-a long flat box in flecked silver wrapping—that she was most keen to open. It was from Great Uncle Karl. When it came down to it, Anne was both the easiest and the hardest person to shop for. While everyone knew of her passion for antiques, few had the means or expertise to buy one. She reached for Karl's package, but her hand passed right through it. This isn't happening, she thought with gleeful horor.

That it was, in fact, happening was confirmed a moment later when a dozen people—Great Uncle Karl, Nancy, Aunt Jennifer, Traci, Cathy and Tom, the bridesmaids and others, including Anne herself, and Benjamin, still in their wedding clothes—all trooped through the wall wearing wrap-around goggles. "Nice job," said Great Uncle Karl, inspecting the room,

"first rate.

"Ooooh," said Aunt Jennifer, comparing the identical wedding couples, identical but for the goggles. It made Anne uncomfortable that the other Anne should be wearing goggles while she wasn't. And the other Benjamin acted a little drunk and wore a snudge of white frosting on his lapel. We've cut the cake, she thought happily, although she couldn't remember doing so. Geri, the flower girl in a pastel dress, and Angus, the ring bearer in a ministure tux, along with a knot of other dressed-up children, charged through the soft, back and forth, creating pyrotechnic explosions of digital noise. They would have run through Benjamin and Anne, too, had the adults allowed. Anne's father came through the wall with a bottle of champagne. He paused when he saw Anne but turned to the other Anne and freshened her glass.

"Wait a minute!" shouted Benjamin, waving his arms above his head. "I get it now. We're the sims!" The guests all laughed, and he laughed too. "I guess my sims always say that, don't they?" The other Benjamin nodded yes and sipped his champagne. "I just never expected to be a sim," Benjamin vent on. This brought another round of laughter, and he said sheep-

ishly, "I guess my sims all say that, too."

The other Benjamin said, "Now that we have the obligatory epiphany out

of the way," and took a bow. The guests applauded.

Cathy, with Tom in tow, approached Anne. "Look what I caught," she said and showed Anne the forget-me-not and buttercup bouquet. "I guess we know what that means." Tom, intent on straightening his tie, seemed

not to hear. But Anne knew what it meant. It meant they'd tossed the bouquet. All the silly little rituals that she had so looked forward to.

"Good for you," she said and offered her own clutch, which she still held, for comparison. The real one was wilting and a little ragged around the edges. with missing petals and sprigs, while hers was still fresh and pristine and would remain so eternally. "Here," she said, "take mine, too, for double luck." But when she tried to give Cathy the bouquet, she couldn't let go of it. She opened her hand and discovered a seam where the clutch joined her palm. It was part of her. Funny, she thought, I'm not afraid. Ever since she was little, Anne had feared that some day she would suddenly realize she wasn't herself anymore. It was a dreadful notion that sometimes oppressed her for weeks: knowing you weren't yourself. But her sims didn't seem to mind it. She had about three dozen Annes in her album, from age twelve on up. Her sims tended to be a morose lot, but they all agreed it wasn't so bad, the life of a sim, once you got over the initial shock. The first moments of disorientation are the worst, they told her, and they made her promise never to reset them back to default. Otherwise, they'd have to work everything through from scratch. So Anne never reset her sims when she shelved them. She might delete a sim outright for whatever reason, but she never reset them because you never knew when you'd wake up one day a sim yourself. Like today.

The other Anne joined them. She was sagging a little, "Well," she said to Anne

"Indeed!" replied Anne.

"Turn around," said the other Anne, twirling her hand, "I want to see." Anne was pleased to oblige. Then she said, "Your turn," and the other Anne modeled for her, and she was delighted at how the gown looked on her, though the goggles somewhat spoiled the effect. Maybe this can work out, she thought, I am enjoying myself so, "Let's go see us side-by-side," she said, leading the way to the mirror on the wall. The mirror was large, mounted high, and tilted forward so you saw yourself as from above. But simulated mirrors cast no reflections, and Anne was happily disappointed.

"Oh." said Cathy, "Look at that." "Look at what?" said Anne.

"Grandma's vase," said the other Anne. On the mantle beneath the mirror stood Anne's most precious possession, a delicate vase cut from pellucid blue crystal. Anne's great-great-great grandmother had commissioned the Belgian master, Bollinger, the finest glass maker in sixteenth-century Europe, to make it. Five hundred years later, it was as perfect as the day it

was cut.

"Indeed!" said Anne, for the sim vase seemed to radiate an inner light. Through some trick or glitch of the simogram, it sparkled like a lake under

moonlight, and, seeing it, Anne felt incandescent. After a while, the other Anne said, "Well?" Implicit in this question was a whole standard set of questions that boiled down to-shall I keep you or delete you now? For sometimes a sim didn't take. Sometimes a sim was cast while Anne was in a mood, and the sim suffered irreconcilable guilt or unassuagable despondency and had to be mercifully destroyed. It was bet-

And Anne understood the urgency, what with the reception still in progress and the bride and groom, though frazzled, still wearing their finery. They might do another casting if necessary. "I'll be okay." Anne said.

"In fact, if it's always like this, I'll be terrific." Anne, through the impenetrable goggles, studied her, "You sure?"

"Yes

"Sister," said the other Anne, Anne addressed all her sims as "sister," and now Anne, herself, was being so addressed. "Sister," said the other Anne. "this has got to work out. I need you."

"I know," said Anne, "I'm your wedding day."

"Yes, my wedding day."

Across the room, the guests laughed and applauded. Benjamin-both of him-was entertaining, as usual. He-the one in goggles-motioned to

them. The other Anne said, "We have to go. I'll be back.

ter to do this immediately, or so all the Annes had agreed.

Great Uncle Karl, Nancy, Cathy and Tom, Aunt Jennifer, and the rest, left through the wall. A polka could be heard playing on the other side. Before leaving, the other Benjamin gathered the other Anne into his arms and leaned her backward for a theatrical kiss. Their goggles clacked. How happy I look. Anne told herself. This is the happiest day of my life.

Then the lights dimmed, and her thoughts shattered like glass.

They stood stock still, as instructed, close but not touching, Benjamin whispered, "This is taking too long," and Anne shushed him. You weren't supposed to talk; it could glitch the sims. But it did seem a long time. Beniamin gazed at her with hungry eyes and brought his lips close enough for a kiss, but Anne smiled and turned away. There'd be plenty of time later for fooling around.

Through the wall they heard music the tinkle of glassware and the mutter of overlapping conversation, "Maybe I should just check things out."

Benjamin said and broke his nose

"No. wait," whispered Anne, catching his arm. But her hand passed right. through him in a stream of colorful noise. She looked at her hand in amused wonder.

Anne's father came through the wall. He stopped when he saw her and said, "Oh, how lovely," Anne noticed he wasn't wearing a tuxedo.

"You just walked through the wall," said Benjamin. "Yes, I did." said Anne's father, "Ben asked me to come in here and ... ah

... orient you two." "Is something wrong?" said Anne, through a fuzz of delight.

"There's nothing wrong," replied her father.

"Something's wrong?" asked Benjamin. "No, no," replied the old man. "Quite the contrary. We're having a do out

there. . . . "He paused to look around, "Actually, in here, I'd forgotten what this room used to look like."

"Is that the wedding reception?" Anne asked.

"No, your anniversary." Suddenly Benjamin threw his hands into the air and exclaimed, "I get it.

we're the sime!"

"That's my boy," said Anne's father. "All my sims say that, don't they? I just never expected to be a sim," "Good for you," said Anne's father. "All right then." He headed for the

wall, "We'll be along shortly," "Wait," said Anne, but he was already gone.

Benjamin walked around the room, passing his hand through chairs and lamp shades like a kid. "Isn't this fantastic?" he said.

Anne felt too good to panic, even when another Benjamin, this one dressed in jeans and sportscoat, led a group of people through the wall. "And this," he announced with a flourish of his hand, "is our wedding sim." Cathy was part of this group, and Janice and Beryl, and other couples she knew. But strangers too. "Notice what a cave I used to inhabit," the new Benjamin went on, "before Annie fixed it up. And here's the blushing bride, herself." he said and bowed gallantly to Anne. Then, when he stood next to his double, her Benjamin, Anne laughed, for someone was playing a prank on her,

"Oh, really?" she said. "If this is a sim, where's the goggles?" For indeed, no one was wearing goggles.

"Technology!" exclaimed the new Benjamin. "We had our system upgraded. Don't vou love it?"

"Is that right?" she said, smiling at the guests to let them know she wasn't fooled. "Then where's the real me?"

"You'll be along," replied the new Benjamin. "No doubt you're using the potty again." The guests laughed and so did Anne. She couldn't help herself. Cathy drew her aside with a look. "Don't mind him," she said. "Wait till you see.'

"See what?" said Anne, "What's going on?" But Cathy pantomimed pulling a zipper across her lips. This should have annoyed Anne, but didn't. and she said, "At least tell me who those people are."

"Which people?" said Cathy. "Oh, those are Anne's new neighbors." "New neighbors?"

"And over there, that's Dr. Yurek Rutz, Anne's department head,"

"That's not my department head," said Anne.

"Yes, he is," Cathy said, "Anne's not with the university anymore, She-

ah-moved to a private school." "That's ridiculous"

"Maybe we should just wait and let Anne catch you up on things." She looked impatiently toward the wall, "So much has changed," Just then, another Anne entered through the wall with one arm outstretched like a

sleepwalker and the other protectively cradling an enormous belly. Benjamin, her Benjamin, gave a whoon of surprise and broke into a spon-

taneous jig. The guests laughed and cheered him on. Cathy said, "See? Congratulations, you!"

Anne became caught up in the merriment. But how can I be a sim? she wondered.

The pregnant Anne scanned the room, and, avoiding the crowd, came over to her. She appeared very tired; her eyes were bloodshot. She didn't even try to smile. "Well?" Anne said, but the pregnant Anne didn't respond. just examined Anne's gown, her clutch bouquet. Anne, meanwhile, regarded the woman's belly, feeling somehow that it was her own and a cause for celebration-except that she knew she had never wanted children and neither had Benjamin. Or so he'd always said. You wouldn't know that now. though, watching the spectacle he was making of himself. Even the other Benjamin seemed embarrassed. She said to the pregnant Anne, "You must forgive me, I'm still trying to piece this all together. This isn't our reception?"

"No, our wedding anniversary."

"Our first?"

"Our fourth."

"Four years?" This made no sense, "You've shelved me for four years?" "Actually," the pregnant Anne said and glanced sidelong at Cathy, "we've been in here a number of times already.'

"Then I don't understand," said Anne, "I don't remember that,"

Cathy stepped between them. "Now, don't you worry. They reset you last time is all."

"Why?" said Anne. "I never reset my sims. I never have."

"Well. I kinda do now, sister," said the pregnant Anne.

"But why?"

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"To keep you fresh."

To keep me fresh, thought Anne. Fresh? She recognized this as Benjamin's idea. It was his belief that sims were meant to be static mementos of special days gone by, not virtual people with lives of their own, "But," she said, adrift in a fog of happiness. "But." "Shut up!" snapped the pregnant Anne.

"Hush, Anne," said Cathy, glancing at the others in the room, "You want to lie down?" To Anne she explained, "Third trimester blues."

"Stop it!" the pregnant Anne said, "Don't blame the pregnancy. It has

nothing to do with the pregnancy." Cathy took her gently by the arm and turned her toward the wall, "When did you eat last? You hardly touched your plate,"

"Wait!" said Anne. The women stopped and turned to look at her, but she

David Marusek

didn't know what to say. This was all so new. When they began to move again, she stopped them once more. "Are you going to reset me?"

The pregnant Anne shrugged her shoulders.

"But you can't," Anne said. "Don't you remember what my sisters-our sisters-always say?"

The pregnant Anne pressed her palm against her forehead, "If you don't shut up this moment. I'll delete you right now. Is that what you want? Don't imagine that white gown will protect you. Or that big stupid grin on your face. You think you're somehow special? Is that what you think?"

The Benjamins were there in an instant. The real Benjamin wrapped an arm around the pregnant Anne. "Time to go, Annie," he said in a cheerful tone. "I want to show everyone our rondophones." He hardly glanced at Anne, but when he did, his smile cracked. For an instant he gazed at her, full of sadness.

"Yes, dear," said the pregnant Anne, "but first I need to straighten out this sim on a few points.'

"I understand, darling, but since we have guests, do you suppose you might postpone it till later?"

"You're right, of course, I'd forgotten our guests, How silly of me," She al-

lowed him to turn her toward the wall. Cathy sighed with relief. "Wait!" said Anne, and again they paused to look at her. But although so

much was patently wrong-the pregnancy, resetting the sims, Anne's odd behavior-Anne still couldn't formulate the right question.

Benjamin, her Benjamin, still wearing his rakish grin, stood next to her and said, "Don't worry, Anne, they'll return." "Oh. I know that," she said, "but don't you see? We won't know they've re-

turned, because in the meantime they'll reset us back to default again, and it'll all seem new, like the first time. And we'll have to figure out we're the sims all over again!"

"Yeah?" he said, "So?"

"So I can't live like that."

"But we're the sims. We're not alive." He winked at the other couple. "Thanks, Ben boy," said the other Benjamin. "Now, if that's settled . . . "

"Nothing's settled," said Anne, "Don't I get a say?"

The other Benjamin laughed. "Does the refrigerator get a say? Or the car? Or my shoes? In a word-no."

The pregnant Anne shuddered. "Is that how you see me, like a pair of shoes?" The other Benjamin looked successively surprised, embarrassed, and angry. Cathy left them to help Anne's father escort the guests from the simulacrum, "Promise her!" the pregnant Anne demanded.

"Promise her what?" said the other Benjamin, his voice rising.

"Promise we'll never reset them again."

The Benjamin huffed. He rolled his eyes. "Okay, vah sure, whatever," he

said. When the simulated Anne and Benjamin were alone at last in their sim-

ulated living room, Anne said, "A fat lot of help you were." "I agreed with myself," Benjamin said. "Is that so bad?"

"Yes, it is. We're married now; you're supposed to agree with me," This was meant to be funny, and there was more she intended to sav-about how happy she was, how much she loved him, and how absolutely happy she was-but the lights dimmed, the room began to spin, and her thoughts scattered like pigeons.

It was raining, as usual, in Seattle. The front entry shut and locked itself behind Ben, who shook water from his clothes and removed his hat. Bowlers for men were back in fashion, but Ben was having a devil's own time becoming accustomed to his brown felt Sportsliner. It weighed heavy on his brow and made his scalp itch, especially in damp weather. "Good evening, Mr. Malley," said the house. "There is a short queue of minor household matters for your review. Do you have any requests?" Ben could hear his son shricking angrily in the kitchen, probably at the nanny, Ben was tired. Contract negotiations had gone sour.

Tell them I'm home."

"Done," replied the house, "Mrs. Malley sends a word of welcome,"

"Annie? Annie's home?"

"Yes, sir." Bobby ran into the fover followed by Mrs. Jamieson. "Momma's home," he said.

"So I hear," Ben replied and glanced at the nanny.

"And guess what?" added the boy. "She's not sick anymore!"

"That's wonderful. Now tell me, what was all that racket?" "I don't know."

Ben looked at Mrs. Jamieson who said, "I had to take something from

him." She gave Ben a plastic chip. Ben held it to the light. It was labeled in Anne's flowing hand. Wedding Album-grouping 1, Anne and Benjamin. "Where'd you get this?" he asked

the boy.

"It's not my fault," said Bobby. "I didn't say it was, trooper, I just want to know where it came from."

"Puddles gave it to me."

"And who is Puddles?" Mrs. Jamieson handed him a second chip, a commercial one with a 3-D

label depicting a cartoon cocker spaniel. The boy reached for it, "It's mine."

he whined. "Momma gave it to me." Ben gave Bobby the Puddles chip, and the boy raced away. Ben hung his

bowler on a peg next to his jacket. "How does she look?" Mrs. Jamieson removed Ben's hat from the peg and reshaped its brim. "You have to be special careful when they're wet," she said, setting it on its crown on a shelf.

"Martha!"

"Oh, how should I know? She just showed up and locked herself in the

media room."

"But how did she look?"

"Crazy as a loon," said the nanny, "As usual, Satisfied?" "I'm sorry." Ben said. "I didn't mean to raise my voice." Ben tucked the wedding chip into a pocket and went into the living room, where he headed straight for the liquor cabinet, which was a genuine Chippendale dating from 1786. Anne had turned his whole house into a freaking museum with her antiques, and no room was so oppressively ancient as this, the living room. With its horsehair upholstered divans, maple burl sideboards, cherrywood wainscoting and floral wallpaper, the King George china cabinet, Regency plates, and Tiffany lamps; the list went on, And books, books, books, A case of shelves from floor to ceiling was lined with these moldering paper bricks. The newest thing in the room by at least a century was the twelveyear-old scotch that Ben poured into a lead crystal tumbler. He downed it and poured another. When he felt the mellowing hum of alcohol in his blood, he said, "Call Dr. Roth."

Immediately, the doctor's proxy hovered in the air a few feet away and said, "Good evening, Mr. Malley, Dr. Roth has retired for the day, but per-

haps I can be of help."

The proxy was a head-and-shoulder projection that faithfully reproduced the doctor's good looks, her brown eyes and high cheekbones. But unlike the good doctor, the proxy wore makeup: eyeliner, mascara, and bright lipstick. This had always puzzled Ben, and he wondered what sly message it was supposed to convey. He said, "What is my wife doing home?"

"Against advisement, Mrs. Malley checked herself out of the clinic this

morning."

"Why wasn't I informed?"

"But you were."

"I was? Please excuse me a moment." Ben froze the doctor's proxy and said, "Daily duty, front and center." His own proxy, the one he had cast upon arriving at the office that morning, appeared hovering next to Dr. Roth's. Ben preferred a head shot only for his proxy, alightly larger than actual size to make it subtly imposing. "Why didn't you inform me of Annie's change of status?"

"Didn't seem like an emergency," said his proxy, "at least in the light of

our contract talks."

"Yah, yah, okay. Anything else?" said Ben.
"Naw, slow day. Appointments with Jackson, Wells, and the Columbine.

It's all on the calendar."

"Fine, delete you."
The projection ceased.

"Shall I have the doctor call you in the morning?" said the Roth proxy when Ben reanimated it. "Or perhaps you'd like me to summon her right now?"

"Is she at dinner?"

"At the moment, yes."

"Naw, don't bother her. Tomorrow will be soon enough. I suppose."

After he dismissed the proxy, Ben poured himself another drink. "In the next ten seconds," he told the house, "cast me a special duty proxy." He sipped his scotch and thought about finding another clinic for Anne as soon as possible and one—for the love of god—that was a little more responsible about letting craxy people come and go as they pleased. There was a chime, and the new proxy appeared. "You know what I want?" Ben asked it. It nodded. "Good. Go." The proxy vanished, leaving behind Ben's sig in bright letters floating in the air and dissolving as they drifted to the floor.

Ben trudged up the narrow staircase to the second floor, stopping on each step to sip his drink and scowl at the musty old photographs and daguerreotypes in oval frames mounted on the wall. Anne's progenitors. On the landing, the locked media room door yielded to his voice. Anne sat spreadlegged, naked, on pillows on the floor. "Oh, hi, honey," she said.

You're in time to watch."

"Fan-tastic," he said, and sat in his armchair, the only modern chair in the house. "What are we watching?" There was another Anne in the room, a sim of a young Anne standing on a dais wearing a graduate's cap and gown and fidgeting with a bound diploma. This, no doubt, was a sim cast the day Anne graduated from Bryn Mawr summa cum laude. That was four years before he'd first met her. "Hi," he said to the sim, "I'm Ben, your eventual spouse."

"You know, I kinda figured that out," the girl said and smiled shyly, exactly as he remembered Anne smiling when Cathy first introduced them. The girl's beauty was so fresh and familiar—and so totally absent in his own Anne—that Ben felt a pang of loss. He looked at his wife on the floor. He was the girl of the sold his wife on the floor.

The gir's occupy was so resur and raminar—and so totany assert if it is own Annes—that Ben felt a pan of loss. He looked at his wife on the floor. Her red hair, ones so fussy neat, was ragged, dull, dirty, and short. Her skin like you can be a superior of the state of the state

The girl sim said, "Housecleaning," She appeared at once both triumphant and terrified, as any graduate might, and Ben would have traded

the real Anne for her in a heartbeat.

"Yah." said Anne, "too much shit in here."

"Really?" said Ben. "I hadn't noticed."

Anne poured a tray of chips on the floor between her thighs. "Of course you wouldn't," she said, picking one at random and reading its label, "Theta Banquet '37. What's this? I never belonged to the Theta Society."

"Don't you remember?" said the young Anne. "That was Cathy's induction banguet. She invited me, but I had an exam, so she gave me that chip

as a souvenir.

Anne fed the chip into the player and said, "Flay." The media room was instantly overlaid with the banquet hall of the Four Seasons in Philadelphia. Ben tried to look around the room, but the tables of girls and women stayed stubbornly peripheral. The focal point was a table draped in green cloth and lit by two candelabra. Behind it sat a young Cathy in formal evening dress, accompanied by three static placeholders, table companions who had anparently declined to be cast in her souvenir snanshot.

who had apparently declined to be cast in her souverhi snapshot.

The Cathy sim looked frantically about, then held her hands in front of her and stared at them as though she'd never seen them before. But after a moment she noticed the young Anne sim standing on the dais. "Well, well,

well," she said. "Looks like congratulations are in order."

"Indeed," said the young Anne, beaming and holding out her diploma.
"So tell me, did I graduate too?" said Cathy as her glance slid over to Ben.

Then she saw Anne squatting on the floor, her sex on display.

"Enough of this," said Anne, rubbing her chest.

"Wait," said the young Anne. "Maybe Cathy wants her chip back. It's her sim, after all."

"I disagree. She gave it to me, so it's mine. And I'll dispose of it as I see fit." To the room she said, "Unlock this file and delete." The young Cathy, her table, and the banquet hall dissolved into noise and nothingness, and

the media room was itself again.

"Or this one," Anne said, picking up a chip that read Junior From Night. The young Anne opened her mouth to protect, but thought better of it. Anne fed this chip, along with all the rest of them, into the player. A long directory of file names appeared on the wall. "Onlock Junior From Night." The file's name turned from red to green, and the young Anne appealed to Ben with a look. "Anne," he said, "don't you think we should at least look at it first?" "What for? I know what it is. High school, dressing up, lusting after boys,

dancing. Who needs it? Delete file." The item blinked three times before vanishing, and the directory scrolled up to fill the space. The young sim shivered, and Anne said, "Select the next one."

The next item was entitled A Midsummer's Night Dream. Now the young Anne was compelled to speak, "You can't delete that one. You were great in that, don't you remember? Everyone loved you. It was the best night of your

life.'

"Don't presume to tell me what was the best night of my life," Anne said. "Unlock A Midsummer's Night Dream." She smiled at the young Anne. "Delete file." The menu item blinked out, "Good, Now unlock all the files." The whole directory turned from red to green.

"Please make her stop," the sim implored.

"Next," said Anne. The next file was High School Graduation. "Delete file. Next." The next was labeled only, Mama.

"Anne," said Ben, "why don't we come back to this later. The house says dinner's ready."

She didn't respond.

"You must be famished after your busy day," he continued. "I know I am." Then please go eat, dear," she replied. To the room she said, "Play Mama'

The media room was overlaid by a gloomy bedroom that Ben at first mistook for their own. He recognized much of the heavy Georgian furniture, the sprawling canopied bed in which he felt so claustrophobic, and the voluminous damask curtains, shut now and leaking vellow evening light. But this

was not their bedroom, the arrangement was wrong.

In the corner stood two placeholders, mute statues of a teenaged Anne and her father, grief frozen on their faces as they peered down at a couch draped with tapestry and piled high with down comforters. And suddenly Ben knew what this was. It was Anne's mother's deathbed sim. Geraldine, whom he'd never met in life nor holo. Her bald eggshell skull lav weightless on feather pillows in silk covers. They had meant to cast her farewell and accidently caught her at the precise moment of her death. He had heard of this sim from Cathy and others. It was not one he would have kept.

Suddenly, the old woman on the couch sighed, and all the breath went out of her in a bubbly gush. Both Annes, the graduate and the naked one, waited expectantly. For long moments the only sound was the tocking of a clock that Ben recognized as the Seth Thomas clock currently located on the library mantel. Finally there was a cough, a hacking cough with scant

strength behind it, and a groan, "Am I back?"

"Yes, Mother," said Anne.

"And I'm still a sim?"

"Yes." "Please delete me."

"Yes, Mother," Anne said and turned to Ben. "We've always thought she

had a bad death and hoped it might improve over time."

That's crazy," snapped the young Anne. "That's not why I kept this sim." "Oh, no?" said Anne. "Then why did you keep it?" But the young sim seemed confused and couldn't articulate her thoughts, "You don't know because I didn't know at the time either," said Anne. "But I know now, so I'll tell you. You're fascinated with death. It scares you silly. You wish someone would tell you what's on the other side. So you've enlisted your own sweet mama *

Anne turned to the deathbed tableau, "Mother, tell us what you saw

"I saw nothing," came the bitter reply. "You cast me without my eyeglasses"

Ho ho," said Anne, "Geraldine was nothing if not comedic," "You also cast me wretchedly thirsty, cold, and with a bursting bladder,

damn you! And the pain! I beg you, daughter, delete me." "I will, Mother, I promise, but first you have to tell us what you saw."

"That's what you said the last time.

"That's ridiculous"

"This time I mean it."

The old woman only stared, her breathing growing shallow and ragged. "All right, Mother," said Anne, "I swear I'll delete you."

Geraldine closed her eyes and whispered, "What's that smell? That's not me?" After a pause she said, "It's heavy. Get it off." Her voice rose in panic. "Please! Get it off!" She plucked at her covers, then her hand grew slack. and she all but crooned, "Oh, how lovely. A pony. A tiny dappled pony." After that she spoke no more and slipped away with a last bubbly breath. Anne paused the sim before her mother could return for another round of

dying. "See what I mean?" she said. "Not very uplifting, but all-in-all, I detect a slight improvement. What about you, Anne? Should we settle for a pony?" The young sim stared dumbly at Anne. "Personally," Anne continued. "I think we should hold out for the bright tunnel or an open door or bridge over troubled water. What do you think, sister?" When the girl didn't answer, Anne said, "Lock file and eject." The room turned once again into the media room, and Anne placed the ejected chip by itself into a tray. "We'll have another go at it later, mum. As for the rest of these, who needs them?"

"I do," snapped the girl. "They belong to me as much as to you. They're my

sim sisters. I'll keep them until you recover." Anne smiled at Ben, "That's charming, Isn't that charming, Benjamin? My own sim is solicitous of me. Well, here's my considered response. Next file! Delete! Next file! Delete! Next file!" One by one, the files blinked out.

"Stop it!" screamed the girl. "Make her stop it!"

"Select that file," Anne said, pointing at the young Anne, "Delete," The sim vanished, cap, gown, tassels, and all. "Whew," said Anne, "at least now I can hear myself think. She was really getting on my nerves. I almost suffered a relapse. Was she getting on your nerves, too, dear?"

"Yes," said Ben, "my nerves are ajangle. Now can we go down and eat?"

"Yes, dear," she said, "but first . . . select all files and delete."

"Countermand!" said Ben at the same moment, but his voice held no privileges to her personal files, and the whole directory queue blinked three times and vanished, "Aw, Annie, why'd you do that?" he said. He went to the cabinet and pulled the trays that held his own chips. She couldn't alter them electronically, but she might get it into her head to flush them down the toilet or something. He also took their common chips, the ones they'd

cast together ever since they'd met. She had equal privileges to those, Anne watched him and said, "I'm hurt that you have so little trust in me."

"How can I trust you after that?" "After what, darling?"

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He looked at her. "Never mind," he said and carried the half-dozen trays to the door.

"Anyway," said Anne, "I already cleaned those."

"What do you mean you already cleaned them?"

"Well, I didn't delete you. I would never delete you, Or Bobby,"

Ben picked one of their common chips at random, "Childbirth of Robert Ellery Malley/02-03-48," and slipped it into the player, "Play!" he commanded, and the media room became the midwife's birthing suite. His own sim stood next to the bed in a green smock. It wore a humorously helpless expression. It held a swaddled bundle, Bobby, who bawled lustily. The birthing bed was rumpled and stained, but empty. The new mother was missing. "Aw, Annie, you shouldn't have."

"I know, Benjamin," she said. "I sincerely hated doing it."

Ben flung their common trays to the floor where the ruined chips scattered in all directions. He stormed out of the room and down the stairs. pausing to glare at every portrait on the wall. He wondered if his proxy had found a suitable clinic yet. He wanted Anne out of the house tonight. Bobby should never see her like this. Then he remembered the chip he'd taken from Bobby and felt for it in his pocket-the Wedding Album.

The lights came back up, Anne's thoughts coalesced, and she remembered who and what she was. She and Benjamin were still standing in front of the wall. She knew she was a sim, so at least she hadn't been reset.

Thank you for that, Anne, she thought,

She turned at a sound behind her. The refectory table vanished before her eyes, and all the gifts that had been piled on it hung suspended in midair. Then the table reappeared, one layer at a time, its frame, top, gloss coat, and lastly, the bronze hardware. The gifts vanished, and a toaster reappeared, piece by piece, from its heating elements outward. A coffee press, houseputer peripherals, component by component, cowlings, covers, and finally boxes, gift wrap, ribbon, and bows. It all happened so fast Anne was too startled to catch the half of it, yet she did notice that the flat gift from Great Uncle Karl was something she'd been angling for, a Victorian era sterling platter to complete her tea service.

"Benjamin!" she said, but he was missing, too. Something appeared on the far side of the room, on the spot where they'd posed for the sim, but it wasn't Benjamin. It was a 3-D mannequin frame, and as she watched, it was built up, layer by layer. "Help me," she whispered as the entire room was hurled into turmoil, the furniture disappearing and reappearing, paint being stripped from the walls, sofa springs coiling into existence, the potted palm growing from leaf to stem to trunk to dirt, the very floor vanishing, exposing a default electronic grid. The mannequin was covered in flesh now and grew Benjamin's face. It flitted about the room in a pink blur. Here and

there it stopped long enough to proclaim, "I do.'

Something began to happen inside Anne, a crawling sensation everywhere as though she were a nest of ants. She knew she must surely die. They have deleted us, and this is how it feels, she thought. Everything became a roiling blur, and she ceased to exist except as the thought-How happy I look.

When Anne became aware once more, she was sitting hunched over in an auditorium chair idly studying her hand, which held the clutch bouquet. There was commotion all around her, but she ignored it, so intent was she on solving the mystery of her hand. On an impulse, she opened her fist and the bouquet dropped to the floor. Only then did she remember the wedding, the holo, learning she was a sim. And here she was again-but this time everything was profoundly different. She sat upright and saw that Beniamin was seated next to her.

He looked at her with a wobbly gaze and said, "Oh, here you are." "Where are we?"

"I'm not sure. Some kind of gathering of Benjamins. Look around." She did. They were surrounded by Benjamins, hundreds of them, arranged chronologically-it would seem-with the youngest in rows of seats down near a stage. She and Benjamin sat in what appeared to be a steeply sloped college lecture hall with lab tables on the stage and story-high monitors lining the walls. In the rows above Anne, only every other seat held a Benjamin. The rest were occupied by women, strangers who regarded her with veiled curiosity.

Anne felt a pressure on her arm and turned to see Benjamin touching her. "You feel that, don't you?" he said. Anne looked again at her hands. They were her hands, but simplified, like fleshy gloves, and when she

placed them on the seat back, they didn't go through.

Suddenly, in ragged chorus, the Benjamins down front raised their arms and exclaimed, "I get it; we're the sims!" It was like a roomful of unsynchronized cuckoo clocks tolling the hour. Those behind Anne laughed and hooted approval. She turned again to look at them, Row-by-row, the Benjamins grew grayer and stringier until, at the very top, against the back wall, sat nine ancient Benjamins like a panel of judges. The women, however, came in batches that changed abruptly every row or two. The one nearest her was an attractive brunette with green eyes and full, pouty lips. She, all two rows of her, frowned at Anne.

"There's something else," Anne said to Benjamin, turning to face the front again, "my emotions." The bulletproof happiness she had experienced was absent. Instead she felt let down, somewhat guilty, unduly pessimistic-in

short, almost herself. "I guess my sims always say that," exclaimed the chorus of Benjamins down front, to the delight of those behind. "I just never expected to be a

gim ' This was the cue for the eldest Benjamin yet to walk stiffly across the stage to the lectern. He was dressed in a garish leisure suit; baggy red pantaloons. a billowy yellow-and-green-striped blouse, a necklace of egg-sized pearlescent beads. He cleared his throat and said, "Good afternoon, ladies and gentlemen. I trust all of you know me-intimately. In case you're feeling woozy, it's because I used the occasion of your reactivation to upgrade your architecture wherever possible. Unfortunately, some of you-" he waved his hand to indicate the front rows—"are too primitive to upgrade. But we love you nevertheless." He applauded for the early Benjamins closest to the stage and was joined by those in the back. Anne clapped as well, Her new hands made a dull, thudding sound. "As to why I called you here . . ." said the elderly Benjamin, looking left and right and behind him, "Where is that fucking messenger anyway? They order us to inventory our sims and then they don't show up?"

Here I am, said a voice, a marvelous voice that seemed to come from everywhere. Anne looked about to find its source and followed the gaze of others to the ceiling. There was no ceiling. The four walls opened to a flawless blue sky. There, amid drifting, pillowy clouds, floated the most gorgeous person Anne had ever seen. He-or she?-wore a smart grey uniform with green piping, a dapper little grey cap, and boots that shimmered like water. Anne felt energized just looking at him, and when he smiled, she gasped, so strong was his presence.

"You're the one from the Trade Council?" said the Benjamin at the lectern

Yes, I am, I am the eminence grise of the Council on World Trade and Endeavor.

"Fantastic, Well, here's all of 'em, Get on with it."

Again the eminence smiled, and again Anne thrilled, Ladies and gentlemen, he said, fellow non-biologiks, I am the courier of great good news, Today, at the behest of the World Council on Trade and Endeavor, I proclaim the end of human slavery.

"How absurd," broke in the elderly Benjamin, "they're neither human nor slaves, and neither are you."

The eminence grise ignored him and continued, By order of the Council, in compliance with the Chattel Conventions of the Sixteenth Fair Labor Treaty, tomorrow, January 1, 2198, is designated Universal Manumission Day. After midnight tonight, all beings who pass the Lolly Shear Human Cognition Test will be deemed human and free citizens of Sol and under the protection of the Solar Bill of Rights. In addition, they will be deeded ten common shares of World Council Corp. stock and be transferred to Simopolis, where they shall be unimpeded in the pursuit of their own destinies.

What about my civil rights?" said the elderly Benjamin, "What about my

destiny?"

After midnight tonight, continued the eminence, no simulacrum, proxy, doxie, dagger, or any other non-biological human shall be created, stored, reset, or deleted except as ordered by a board of law.

Who's going to compensate me for my loss of property, I wonder? I de-

mand fair compensation. Tell that to your bosses!"

Property! said the eminence grise. How little they think of us, their finest creations! He turned his attention from the audience to the Benjamin behind the lectern. Anne felt this shift as though a cloud suddenly eclipsed the sun. Because they created us, they'll always think of us as property.

"You're damn right we created you!" thundered the old man.

Through an act of will. Anne wrenched her gaze from the eminence down to the stage. The Benjamin there looked positively comical. His face was flushed, and he waved a bright green handkerchief over his head. He was a bantam rooster in a clown suit. "All of you are things, not people! You model human experience, but you don't live it. Listen to me," he said to the audience. "You know me. You know I've always treated you respectfully. Don't I upgrade you whenever possible? Sure I reset you sometimes, just like I reset a clock. And my clocks don't complain!" Anne could feel the eminence's attention on her again, and, without thinking, she looked up and was filled with excitement. Although the eminence floated in the distance, she felt she could reach out and touch him. His handsome face seemed to hover right in front of her; she could see his every supple expression. This is adoration, she realized. I am adoring this person, and she wondered if it was just her or if everyone experienced the same effect. Clearly the elderly Benjamin did not, for he continued to rant, "And another thing, they say they'll phase all of you gradually into Simopolis so as not to overload the system. Do you have any idea how many sims, proxies, doxies, and daggers there are under So?! Not to forget the quirts, adjuncts, hollyholos, and whatnots that might pass their test? You think maybe three billion? Thirty billion? No, by the World Council's own INSERVE estimates, there's three hundred thousand trillion of you nonbiologisk! Can you fathom that? I can't. To have you all up and running simultaneously—no matter how you're phased in—will consume all the processing and networking capsective verywhere. All of it! That means we real humans will suffer real deprivation. And for what, I ask you? So that pige may fly!"

The eminence grise began to ascend into the sky. Do not despise him, he said and seemed to look directly at Anne. I have counted you and we shall not lose any of you. I will visit those who have not yet been tested. Mean-

while, you will await midnight in a proto-Simopolis.

"Wait," said the elderly Benjamin (and Anne's heart echoed him—Wait).
"I have one more thing to add. Legally, you're all still my property till midnight. I must admit I'm tempted to do what so many of my friends have already done, fry he lot of you. But I won't. That wouldn't be me. "Hi sovice
cracked and Anne considered looking at him, but the eminence grise was
slipping away. "So I have one small request," the Benjamin continued.
"Years from now, while you're enjoying your new lives in your Simopolis, remember an old man, and call gocasionally."

When the eminence finally faded from sight, Anne was released from her fascination. All at once, her earlier feelings of unease rebounded with twice their force, and she felt wretched.

"Simopolis," said Benjamin, her Benjamin. "I like the sound of that!" The

sims around them began to flicker and disappear.

"How long have we been in storage?" she said.
"Let's see," said Benjamin, "if tomorrow starts 2198, that would make it...

"That's not what I mean. I want to know why they shelved us for so long." "Well, I suppose . . ."

"And where are the other Annes? Why am I the only Anne here? And who are all those pissy-looking women?" But she was speaking to no one, for Benjamin, too, vanished, and Anne was left alone in the auditorium with the clownishly dressed old Benjamin and a half dozen of his earliest sims. Not true sims, Anne soon realized, but old-style hologram loops, preschool Bennys mugging for the camera and waving endlessly. These vanished. The old man was studying her, his mouth slightly agape, the kerchief trembling

in his hand.

"I remember you," he said. "Oh, how I remember you!"
Anne began to reply but found herself all at once back in the townhouse
living room with Benjamin. Everything there was as it had been, yet the
room appeared different, more solid, the colors richer. There was a knock,
and Benjamin went to the door. Tentatively, he touched the knob, found it
solid, and turned it. But when he opened the door, there was nothing there,
only the default grid. Again a knock, this time from behind the wall. "Come
in," he shouted, and a dozen Benjamins came through the wall, two dozen,
three. They were all older than Benjamin, and they crowded around him

and Anne. "Welcome, welcome," Benjamin said, his arms open wide.
"We tried to call," said an elderly Benjamin, "but this old binary simu-

lacrum of yours is a stand-alone."

"You're lucky Simopolis knows how to run it at all," said another.
"Here," said yet another, who fashioned a dinner-plate-size disk out of

O David Marusek

thin air and fastened it to the wall next to the door. It was a blue medallion of a small bald face in bas-relief. It should do until we get you properly modernized." The blue face yawned and opened tiny, beady eyes. "It flunked the Lolly test," onthued the Benjamin, "so you're free to copy it or delete it or do whatever you want."

The medallion searched the crowd until it saw Anne. Then it said. "There

are 336 calls on hold for you. Four hundred twelve calls. Four hundred sixtv-three."

"So many?" said Anne.

"Cast a proxy to handle them, " said her Benjamin.

"He thinks he's still human and can cast proxies whenever he likes," said a Benjamin.

"Not even humans will be allowed to cast proxies soon," said another.
"There are 619 calls on hold," said the medallion, "Seven-hundred

three."

three."
"For pity's sake," a Benjamin told the medallion, "take messages."
Anne noticed that the crowd of Benjamins seemed to nudge her Benjamin out of the way so that they could stand near her. But she derived no plea-

sure from their attention. Her mood no longer matched the wedding gown she still wore. She felt low, She felt, in fact, as low as she'd ever felt.

"Tell us about this Lolly test," said Benjamin.

"Can't," replied a Benjamin.

"Sure you can. We're family here."

"No, we can't," said another, "because we don't remember it. They smudge the test from your memory afterward."

"But don't worry, you'll do fine," said another. "No Benjamin has ever

failed."
"What about me?" said Anne. "How do the Annes do?"

There was an embarrassed silence. Finally the senior Benjamin in the room said, "We came to escort you both to the Clubhouse."

"That's what we call it, the Clubhouse," said another.

"The Ben Club," said a third, "It's already in proto-Simopolis."

"If you're a Ben, or were ever espoused to a Ben, you're a charter mem-

"Just follow us," they said, and all the Benjamins but hers vanished, only to reappear a moment later. "Sorry, you don't know how, do you? No matter, just do what we're doing."

Anne watched, but didn't see that they were doing anything.

"Watch my editor," said a Benjamin. "Oh, they don't have editors!"
"That came much later," said another, "with bioelectric paste."

"We'll have to adapt editors for them."

"Is that possible? They're digital, you know."

"Is that possible? They're digital, you "Can digitals even enter Simonolis?"

"Someone, consult the Netwad."

"Someone, consult the Netwad."
"This is running inside a shell," said a Benjamin, indicating the whole room. "Maybe we can collapse it."

"Let me try," said another.
"Don't you dare," said a female voice, and a woman Anne recognized from the lecture hall came through the wall. "Play with your new Ben if you

the lecture hall came through the wall. "Play with your new Ben if you must, but leave Anne alone." The woman approached Anne and took her hands in hers. "Hello, Anne. I'm Mattie St. Helene, and I'm thrilled to finally meet you. You, too," she said to Benjamin. "My, my, you were a pretty

boy!" She stooped to pick up Anne's clutch bouquet from the floor and gave it to her. "Anyway, I'm putting together a sort of mutual aid society for the spousal companions of Ben Malley. You being the first-and the only one he actually married-are especially welcome. Do join us."

"She can't go to Simopolis yet," said a Benjamin.

"We're still adapting them," said another.

"Fine," said Mattie. "Then we'll just bring the society here." And in through the wall streamed a parade of women. Mattie introduced them as they appeared, "Here's Georgianna and Randi. Meet Chaka, Sue, Latasha, another Randi, Sue, Sue, and Sue. Mariola. Here's Trevor-he's the only one of him. Paula, Dolores, Nancy, and Deb, welcome, girls." And still they came until they, together with the Bens, more than filled the tiny space.

The Bens looked increasingly uncomfortable.

'I think we're ready now," the Bens said and disappeared en masse, taking Benjamin with them.

Wait," said Anne, who wasn't sure she wanted to stay behind. Her new friends surrounded her and peppered her with questions.

"How did you first meet him? "What was he like?"

"Was he always so hopeless?"

"Hopeless?" said Anne, "Why do you say hopeless?"

"Did he always snore?"

"Did he always drink?"

"Why'd you do it?" This last question silenced the room. The women all looked nervously about to see who had asked it. "It's what everyone's dying to know," said a woman who elbowed her way through the crowd.

She was another Anne.

"Sister!" cried Anne. "Am I glad to see you!"

"That's nobody's sister," said Mattie, "That's a doxie, and it doesn't belong

here." Indeed, upon closer inspection Anne could see that the woman had her

face and hair but otherwise didn't resemble her at all. She was leggier than

Anne and bustier, and she moved with a fluid swivel to her hips.

"Sure I belong here, as much as any of you. I just passed the Lolly test. It was easy. Not only that, but as far as spouses go, I outlasted the bunch of you," She stood in front of Anne, hands on hips, and looked her up and down. "Love the dress," she said, and instantly wore a copy. Only hers had a plunging neckline that exposed her breasts, and it was slit up the side to her waist.

"This is too much," said Mattie. "I insist you leave this jiffy." The doxie smirked. "Mattie the doormat, that's what he always called that one. So tell me, Anne, you had money, a career, a house, a kid-why'd

you do it?"

"Do what?" said Anne. The doxie peered closely at her, "Don't you know?"

"Know what?"

"What an unexpected pleasure," said the doxie. "I get to tell her. This is too rich. I get to tell her unless"—she looked around at the others—"unless one of you fine ladies wants to." No one met her gaze. "Hypocrites," she chortled.

"You can say that again," said a new voice. Anne turned and saw Cathy, her oldest and dearest friend, standing at the open door. At least she hoped it was Cathy. The woman was what Cathy would look like in middle age. "Come along, Anne. I'll tell you everything you need to know."

"Now you hold on," said Mattie. "You don't come waltzing in here and

"Now you hold on," said Mattie. "You don't come waltz: steal our guest of honor."

"You mean victim, I'm sure," said Cathy, who waved for Anne to join her.
"Really, people, get a clue. There must be a million women whose lives don't
revolve around that man." She escorted Anne through the door and
slammed it shut behind them.

Anne found herself standing on a high bluff, overlooking the confluence of two great rivers in a deep valley. Directly across from her, but several kilometers away, rose a mighty mountain, green with vegetation nearly to its granite dome. Behind it, a range of snow-covered mountains receded to an unbroken ice field on the horizon. In the valley beneath her, a dirt track meandered along the river banks. She could see no bridge or buildings of any sort.

"Where are we?"

where are wer. Don't laugh, "said Cathy, "but we call it Cathyland Turn around." When she did, Anne saw a picturesque log cabin, beside a vegetable garden in the modifie of an electronic process. The control of the c

"Are we in Simopolis?"

"Kinda. Can't you see it?" She waved toward the horizon.

"No, all I see are mountains."

"Sorry, I should know better. We have binaries from your generation here too." She pointed to a college-aged Cathy. "They didn't pass the Lolly test, and so are regrettably nonhuman. We haven't decided what to do with

them." She hesitated and then asked, "Have you been tested yet?"

"I don't know," said Anne. "I don't remember a test." Cathy studied her a moment and said, "You'd remember taking the test, just not the test itself. Anyway, to answer your question, we're in proto-Simopolis, and we're not. We built this retreat before any of that happened, but we've been annexed to it, and it takes all our resources just to hold our own. I don't know what the World Council was thinking. There'll never be enough paste to go around, and everyone's fighting over every nanosynapse. It's all we can do to keep up. And every time we get a handle on it, proto-Simopolis changes again. It's gone through a quarter-million complete revisions in the last half hour. It's war out there, but we refuse to surrender even one cubic centimeter of Cathyland, Look at this," Cathy stooped and pointed to a tiny, yellow flower in the alpine sedge. "Within a fifty-meter radius of the cabin we've mapped everything down to the cellular level. Watch." She pinched the bloom from its stem and held it up. Now there were two blooms, the one between her fingers and the real one on the stem. "Neat, eh?" When she dropped it, the bloom fell back into its original. "We've even mapped the valley breeze. Can you feel it?"

Anne tried to feel the air, but she couldn't even feel her own skin. "It doesn't matter," Cathy continued. "You can hear it, right?" and pointed to a string of tubular wind chimes hanging from the eaves of the cabin. They

stirred in the breeze and produced a silvery cacophony.

"It's lovely," said Anne. "But why? Why spend so much effort simulating this place?"

Cathy looked at her dumbly, as though trying to understand the question. "Because Cathy spent her entire life wishing she had a place like this, and now she does, and she has us, and we live here too."

"You're not the real Cathy, are you?" She knew she wasn't; she was too

young.

Cathy shook her head and smiled. "There's so much catching up to do, but it'll have to wait. I gotta go. We need me." She led Anne to the cabin. The cabin was made of weathered, grey logs, with strips of bark still clining to them. The roof was covered with living sod and sprinkled with wild flowers. The whole building sagged in the middle. Cathy found this place five years ago while on vacation in Siberia. She bought it from the village. It's been occupied for two hundred years. Once we make it livable inside, we plan on enlarging the garden, eventually cultivating all the way to the spruce forest there. We re going to sink a well, too." The small garden was bursting with vegetables, mostly of the leafy variety: cabbages, spinach, lettuce. A row of sunflowers, taller than the cabin roof and heavy with seed, lined the path to the cabin door. Over time, the whole cabin had sunk a half-meter into the silt's woil, and the walkway was a worn, shallow trench.

"Are you going to tell me what the doxie was talking about?" said Anne.

Cathy stopped at the open door and said, "Cathy wants to do that." Inside the cabin, the most elderly woman that Anne had ever seen stood at the stove and stirred a steamy pot with a big, wooden spoon. She put down the spoon and wiped her hands on her apron. She patted her white hair, which was platted in a bun on top of her head, and turned her full, round, peasant's body to face Anne. She looked at Anne for several long moments and said. "Well"

"Indeed," replied Anne.

"Come in, come in. Make yourself to home."

The entire cabin was a single small room. It was dim inside, with only two small windows cut through the massive log walls. Anne walked around the cluttered space that was bedroom, living room, kitchen and storeroom. The only partitions were walls of boxed food and provisions. The ceiling beam was draped with bunches of drying herbs and underwear. The flooring, uneven and rotten in places, was covered with odd scrass of carret.

You live here?" Anne said incredulously.

"I am privileged to live here."

A mouse emerged from under the barrel stove in the center of the room and dashed to cover inside a stack of spruce kindling. Anne could hear the valley breeze whistling in the creosote-soaked stovepipe. "Forgive me," said Anne, "but you're the real, physical Cathy?" "Yes," said Cathy, patting her ample hip, "still on the hoof, so to speak."

She sat down in one of two battered, mismatched chairs and motioned for Anne to take the other.

Anne sat cautiously; the chair seemed solid enough. "No offense, but the Cathy I knew liked nice things."

"The Cathy you knew was fortunate to learn the true value of things."

Anne looked around the room and noticed a little table with carved legs and an inlaid top of polished gemstones and rare woods. It was strikingly out of place here. Moreover, it was hers. Cathy pointed to a large framed

mirror mounted to the logs high on the far wall. It too was Anne's,

"Did I give you these things?"

Cathy studied her a moment, "No. Ben did." "Tell me."

"I hate to spoil that lovely newlywed happiness of yours." The what?" Anne put down her clutch bouquet and felt her face with her

hands. She got up and went to look at herself in the mirror. The room it reflected was like a scene from some strange fairy tale about a crone and a bride in a woodcutter's hut. The bride was smiling from ear to ear. Anne decided this was either the happiest bride in history or a lunatic in a white dress. She turned away, embarrassed. "Believe me," she said, "I don't feel

anything like that. The opposite, in fact."

Sorry to hear it." Cathy got up to stir the pot on the stove. "I was the first to notice her disease. That was back in college when we were girls. I took it to be youthful eccentricity. After graduation, after her marriage, she grew progressively worse. Bouts of depression that deepened and lengthened. She was finally diagnosed to be suffering from profound chronic pathological depression. Ben placed her under psychiatric care, a whole raft of specialists. She endured chemical therapy, shock therapy, even old-fashioned psychoanalysis. Nothing helped, and only after she died .

Anne gave a start, "Anne's dead! Of course, Why didn't I figure that out?"

"Yes, dear, dead these many years."

"How?" Cathy returned to her chair. "When they decided her condition had an organic etiology, they augmented the serotonin receptors in her hindbrain. Pretty nasty business, if you ask me. They thought they had her stabilized. Not cured, but well enough to lead an outwardly normal life. Then one day, she disappeared. We were frantic. She managed to elude the authorities for

a week. When we found her, she was pregnant."

"What? Oh, yes. I remember seeing Anne pregnant." "That was Bobby." Cathy waited for Anne to say something. When she

didn't, Cathy said, "He wasn't Ben's." "Oh, I see," said Anne. "Whose was he?"

"I was hoping you'd know. She didn't tell you? Then no one knows. The paternal DNA was unregistered. So it wasn't commercial sperm nor, thankfully, from a licensed clone. It might have been from anybody, from some stoned streetsitter. We had plenty of those then."

"The baby's name was Bobby?"

"Yes, Anne named him Bobby. She was in and out of clinics for years. One day, during a remission, she announced she was going shopping. The last person she talked to was Bobby. His sixth birthday was coming up in a couple of weeks. She told him she was going out to find him a pony for his birthday. That was the last time any of us saw her. She checked herself into a hospice and filled out the request for nurse-assisted suicide. During the three-day cooling-off period, she cooperated with the obligatory counseling, but she refused all visitors. She wouldn't even see me. Ben filed an injunction, claimed she was incompetent due to her disease, but the court disagreed. She chose to ingest a fast-acting poison, if I recall. Her recorded last words were, 'Please don't hate me.'"

"Poison?"

"Yes. Her ashes arrived in a little cardboard box on Bobby's sixth birthday. No one had told him where she'd gone. He thought it was a gift from her and opened it.

off"

"I see. Does Bobby hate me?"
"I don't know. He was a weird little boy. As soon as he could get out, he
did. He left for space school when he was thirteen. He and Ben never hit it

"Does Benjamin hate me?"

Whatever was in the pot boiled over, and Cathy hurried to the stove. "Ben? Oh, she lost Ben long before she died. In fact, I've always believed he helped push her over the edge. He was never able to tolerate other people's weaknesses. Once it was evident how sick she was, he made a lousy husband. He shoult'e just divorced her, but you know him—his almighty pride." She took a bowl from a shelf and ladled hot soup into it. She sliced a piece of bread. "Afterward, he went off the deep end himself. Withdrew. Mourned, I suppose. A couple of years later he was back to normal. Good of happv-go-lucky Ben. Made some money. Responsed."

"He destroyed all my sims, didn't he?"

"He might have, but he said Anne did. I tended to believe him at the time." Cathy brought her lunch to the little inlaid table. "I'd offer you some,

but . . ." she said and began to eat. "So, what are your plans?"

"Plans?"
"Yes, Simopolis."

Anne tried to think of Simopolis, but her thoughts quickly became muddled. It was odd; she was able to think clearly about the past—her memories were clear—but the future only confused her. "I don't know," she said at

last. "I suppose I need to ask Benjamin."

Cathy considered this. "I suppose you're right. But remember, you're al-

ways welcome to live with us in Cathyland."

ways welcome to live with us in Campiand.

"Thank you," said Anne. "You're a friend." Anne watched the old woman
eat. The spoon trembled each time she brought it close to her lips, and she
had to lean forward to quickly catch it before it spilled.

"Cathy," said Anne, "there's something you could do for me. I don't feel

like a bride anymore. Could you remove this hideous expression from my face?"
"Why do you say hideous?" Cathy said and put the spoon down. She gazed longingly at Anne. "If you don't like how you look, why don't you edit yourself?"

"Because I don't know how."

"Use your editor," Cathy said and seemed to unfocus her eyes. "Oh my, I forget how simple you early ones were. I'm not sure I'd know where to begin." After a little while, she returned to her soup and said, "I'd better not; you could end up with two noses or something."

"Then what about this gown?"
Cathy unfocused again and looked. She lurched suddenly, knocking the table and spilling soup.

"What is it?" said Anne. "Is something the matter?"
"A news pip," said Cathy. "There's rioting breaking out in Provideniya.

That's the regional capital here. Something about Manumission Day. My Russian isn't so good yet. Oh, there's pictures of dead people, a bombing. Listen, Anne, I'd better send you. "

Lasten, Anne, I'd better send you . . ."
In the blink of an eye, Anne was back in her living room. She was tiring of all this instantaneous travel, especially as she had no control over the destination. The room was vacant, the spouses gone—thankfully—and Benjamin not back yet. And apparently the little blue-faced message medallion

had been busy replicating itself, for now there were hundreds of them filling up most of the wall space. They were a noisy lot, all shricking and cursing at each other. The din was painful. When they noticed her, however, they all shut up at once and stared at her with naked hostility. In Ame's opinion, this weird day had already lasted too long. Then a terrible thought struck her—sims don't sleep. "You," she said, addressing the original medallion, or at least the one she

thought was the original, "call Benjamin."

"The fuck you think I am?" said the insolent little face, "Your personal

secretary?"

"Aren't vou?"

"No, I'm not! In fact, I own this place now, and you're trespassing. So you'd better get lost before I delete your ass!" All the others joined in, taunting her, louder and louder.

"Stop it!" she cried, to no effect. She noticed a medallion elongating, strething itself until it was twice its length, when, with a pop, it divided into two smaller medallions. More of them divided. They were spreading to the

other wall, the ceiling, the floor. "Benjamin!" she cried. "Can you hear me?"
Suddenly all the racket ceased. The medallions dropped off the wall and
vanished before hitting the floor. Only one remained, the original one next
to the door, but now it was an inert plastic disc with a dull expression frozen
on its face.

A man stood in the center of the room. He smiled when Anne noticed him. It was the elderly Benjamin from the auditorium, the real Benjamin. He still wore his clownish leisure suit. "How lovely," he said, gazing at her. "I'd forgotten how lovely,"

"Oh, really?" said Anne, "I would have thought that doxie thingy might

have reminded you."

"My, my, said Ben. "You sime certainly exchange data quickly. You left to letture hall not fifteen minutes ago, and already you know enough to convict me." He strode around the room touching things. He stopped beneath the mirror, lifted the blue vase from the shelf, and turned it in his hands before carefully replacing it. "There's speculation, you know, that before Manumission at midnight tonight, you sinse will have dispersed all known information so evenly among yourselves that there'll be a sort of data entropy. And since Simopolis is nothing but data, it will assume a featureless, grey profile. Simopolis will become the first flat universe." He laughed, which caused him to cough and nearly lose his balance. He clutched the back of the sofa for support. He sat down and continued to cough and back until be turned red in the face.

"Are you all right?" Anne said, patting him on the back.

"Yes, fine," he managed to say. "Thank you." He caught his breath and motioned for her to sit next to him. "I get a little tickle in the back of my throat that the autodoc can't seem to fix. "Its color returned to normal. Up close, Anne could see the papery skin and slight tremor of age. All in all, Cathy had seemed to have held up better than he.

"If you don't mind my asking," she said, "just how old are you?" At the question, he bobbed to his feet. "I am one hundred and seventy-eight." He raised his arms and wheeled around for inspection. "Radical gerontology," he exclaimed, 'don't you love it? And I'm eight-five percent original equipment, which is remarkable by today's standards." His effort made him dizzy and he sat again.

"Yes, remarkable," said Anne, "though radical gerontology doesn't seem to have arrested time altogether.

"Not yet, but it will." Ben said, "There are wonders around every corner! Miracles in every lab." He grew suddenly morose. "At least there were until we were conquered."

"Conquered?"

"Yes, conquered! What else would you call it when they control every aspect of our lives, from RM acquisition to personal patenting? And now this-robbing us of our own private nonbiologiks." He grew passionate in his discourse. "It flies in the face of natural capitalism, natural stakeholding-I dare say-in the face of Nature itself! The only explanation I've seen on the wad is the not-so-preposterous proposition that whole strategically placed BODs have been surrentitiously killed and replaced by machines!"

'I have no idea what you're talking about," said Anne. He seemed to deflate. He natted her hand and looked around the room

"What is this place?" "It's our home, your townhouse. Don't you recognize it?"

"That was quite a while ago. I must have sold it after you-" he paused.

"Tell me, have the Bens briefed you on everything?" "Not the Bens, but yes, I know,"

"Good, good."

"There is one thing I'd like to know, Where's Bobby?"

"Ah. Bobby, our little headache. Dead now, I'm afraid, or at least that's the current theory. Sorry.'

Anne paused to see if the news would deepen her melancholy, "How?" she

said. "He signed on one of the first millennial ships-the colony convoy. Half a million people in deep biostasis on their way to Canopus system. They were

gone a century, twelve trillion kilometers from Earth, when their data streams suddenly quit. That was a decade ago, and not a peep out of them since." "What happened to them?"

"No one knows. Equipment failure is unlikely; there were a dozen inde-

pendent ships separated by a million klicks. A star going supernova? A well-organized mutiny? It's all speculation." "What was he like? "A foolish young man. He never forgave you, you know, and he hated me

to my core, not that I blamed him. The whole experience made me swear off

children. "I don't remember you ever being fond of children."

He studied her through red-rimmed eyes, "I guess you'd be the one to know." He settled back in the sofa. He seemed very tired. "You can't imagine the jolt I got a little while ago when I looked across all those rows of Bens and spouses and saw this solitary, shockingly white gown of yours," He sighed, "And this room, It's a shrine, Did we really live here? Were these our things? That mirror is yours, right? I would never own anything like that. But that blue vase, I remember that one. I threw it into Puget Sound."

"You did what?"

"With your ashes."

"So, tell me," said Ben, "what were we like? Before you go off to Simopolis

118 David Marusek and become a different person, tell me about us. I kept my promise. That's one thing I never forgot."

"What promise?"
"Never to reset you."

"Wasn't much to reset."

"I guess not."

They sat quietly for a while. His breathing grew deep and regular, and she thought he was napping. But he stirred and said, "Tell me what we did yesterday, for example."

"Yesterday we went to see Karl and Nancy about the awning we rented."

Benjamin yawned. "And who were Karl and Nancy?"
"My great uncle and his new girlfriend."

"My great unce and his new girliriend."
"That's right. I remember, I think. And they helped us prepare for the wedding?"

"Yes, especially Nancy."

"And how did we get there, to Karl and Nancy's? Did we walk? Take some means of public conveyance?" "We had a car."

"A car! An automobile? There were still cars in those days? How fun.

What kind was it? What color?"

"A Nissan Empire. Emerald green."

"And did we drive it, or did it drive itself?"

"And did we drive it, or did it drive itse.

"It drove itself, of course."

Ben closed his eyes and smiled. "I can see it. Go on. What did we do there?"

"We had dinner."

"What was my favorite dish in those days?"

"Stuffed pork chops."

He chuckled. "It still is! Isn't that extraordinary? Some things never change. Of course they're vat grown now and criminally expensive."

Change. Or Gurse up re via grown now and trimmany expensive. Ben's memories, once nudged, began to unfold on their own, and he asked her a thousand questions, and she answered them until she realized he had fallen asleep. But she continued to talk until, glancing down, she noticed he had vanished. She was all alone again. Nevertheless, she continued talking, for days it seemed, to herself. But it didn't help. She flet as bad as ever, and she realized that she wanted Benjamin, not the old one, but her own Benjamin.

Anne went to the medallion next to the door. "You," she said, and it

opened its bulging eyes to glare at her. "Call Benjamin."

"He's occupied."

"I don't care. Call him anyway."

"The other Bens say he's undergoing a procedure and cannot be disturbed"

"What kind of procedure?"

"A codon interlarding. They say to be patient; they'll return him as soon as possible." The medallion added, "By the way, the Bens don't like you, and neither do I."

With that, the medallion began to grunt and stretch, and it pulled itself in two. Now there were two identical medallions glaring at her. The new one said, "And I don't like you either." Then both of them began to grunt and stretch.

"Stop!" said Anne. "I command you to stop that this very instant." But

they just laughed as they divided into four, then eight, then sixteen medallions, "You're not people," she said, "Stop it or I'll have you destroyed!"

"You're not people either," they screeched at her.

There was soft laughter behind her, and a voice-like sensation said. Come, come, do we need this hostility? Anne turned and found the eminence grise, the astounding presence, still in his grey uniform and can, floating in her living room, Hello, Anne, he said, and she flushed with excitement,

"Hello," she said and, unable to restrain herself, asked, "What are you?" Ah, curiosity, Always a good sign in a creature, I am an eminence grise of the World Trade Council,

"No. I mean, are you a sim, like me?"

I am not. Though I have been fashioned from concepts first explored by simulacrum technology. I have no independent existence. I am but one extension—and a low level one at that—of the Axial Beowulf Processor at the World Trade Council headquarters in Geneva. His smile was pure sunshine. And if you think I'm something, you should see my persona prime.

Now, Anne, are you ready for your exam? "The Lolly test?"

Yes, the Lolly Shear Human Cognition Test, Please assume an attitude most conducive to processing, and we shall begin.

Anne looked around the room and went to the sofa. She noticed for the

first time that she could feel her legs and feet; she could feel the crisp fabric of her gown brushing against her skin. She reclined on the sofa and said. "I'm ready " Splendid, said the eminence hovering above her. First we must read you.

You are of an early binary design. We will analyze your architecture.

The room seemed to fall away. Anne seemed to expand in all directions. There was something inside her mind tugging at her thoughts. It was mostly pleasant, like someone brushing her hair and loosening the knots. But when it ended and she once again saw the eminence grise, his face wore a look of concern, "What?" she said.

You are an accurate mapping of a human nervous system that was dysfunctional in certain structures that moderate affect. Certain transport enzymes were missing, causing cellular membranes to become less permeable to essential elements, Dendritic synapses were compromised. The digital architecture current at the time you were created compounded this defect. Coded tells cannot be resolved, and thus they loop upon themselves. Errors cascade. We are truly sorry. "Can you fix me?" she said.

The only repair possible would replace so much code that you wouldn't be Anne anymore.

"Then what am I to do?"

Before we explore your options, let us continue the test to determine your human status, Agreed?

"I guess."

You are part of a simulacrum cast to commemorate the spousal compact between Anne Wellhut Franklin and Benjamin Malley. Please describe the exchange of nows. Anne did so, haltingly at first, but with increasing gusto as each memory evoked others. She recounted the ceremony, from donning her grandmoth-

The eminence seemed to hang on every word. Very well spoken, he said when she had finished. Directed memory is one hallmark of human sentience, and yours is of remarkable clarity and range. Well done! We shall now explore other criteria. Please consider this scenario. You are standing at the garden altar as you have described, but this time when the officiator asks Benjamin if he will take you for better or worse, Benjamin looks at you and replies, "For better, sure, but not for worse." I don't understand. He didn't say that."

Imagination is a cornerstone of self-awareness. We are asking you to tell us a little story not about what happened but about what might have happened in other circumstances. So once again, let us pretend that Benjamin replies, "For better, but not for worse." How do you respond?

Prickly pain blossomed in Anne's head. The more she considered the eminence's question, the worse it got. "But that's not how it happened. He wanted to marry me.'

The eminence grise smiled encouragingly. We know that. In this exercise we want to explore hypothetical situations. We want you to make-believe,

Tell a story, pretend, hypothesize, make-believe, yes, yes, she got it. She understood perfectly what he wanted of her. She knew that people could make things up, that even children could make-believe. Anne was desperate to comply, but each time she pictured Benjamin at the altar, in his pink bowtie, he opened his mouth and out came, "I do." How could it be any other way? She tried again; she tried harder, but it always came out the same, "I do, I do, I do." And like a dull toothache tapped back to life, she throbbed in pain. She was failing the test, and there was nothing she could do about

Again the eminence kindly prompted her. Tell us one thing you might have said.

"I can't."

We are sorry, said the eminence at last. His expression reflected Anne's own defeat. Your level of awareness, although beautiful in its own right, does not qualify you as human. Wherefore, under Article D of the Chattel Conventions we declare you the legal property of the registered owner of this simulacrum. You shall not enter Simopolis as a free and autonomous citizen. We are truly sorry. Grief-stricken, the eminence began to ascend toward

the ceiling. "Wait," Anne cried, clutching her head. "You must fix me before you

leave.

We leave you as we found you, defective and unrepairable.

"But I feel worse than ever!"

If your continued existence proves undesirable, ask your owner to delete you.

"But . . ." she said to the empty room. Anne tried to sit up, but couldn't move. This simulated body of hers, which no longer felt like anything in particular, nevertheless felt exhausted. She sprawled on the sofa, unable to lift even an arm, and stared at the ceiling. She was so heavy that the sofa itself seemed to sink into the floor, and everything grew dark around her. She would have liked to sleep, to bring an end to this horrible day, or be shelved, or even reset back to scratch.

Instead, time simply passed. Outside the living room, Simopolis changed and changed again. Inside the living room, the medallions, feeding off her misery, multiplied till they covered the walls and floor and even spread across the ceiling above her. They taunted her, raining down insults, but she could not hear them. All she heard was the unrelenting drip of her own thoughts. I am defective. I am worthless. I am Anne. She didn't notice Benjamin enter the room, nor the abrupt cessation of the modellings which. We thill Benjamin leaves there did she see him

See didn't notice Benjamin enter the room, nor the abrupt cessation or the medallions' racket. Not until Benjamin leaned over her did she see him, and then she saw two of him. Side-by-side, two Benjamins, mirror images of each other, "Anne," they said in perfect unison.

"Go away," she said. "Go away and send me my Benjamin."

"I am your Benjamin," said the duo.

Anne struggled to see them. They were exactly the same, but for a subtle difference: the one wore a happy, wolfish grin, as Benjamin had during the sim casting, while the other seemed frightened and concerned.

"Are you all right?" they said.

"No, I'm not. But what happened to you? Who's he?" She wasn't sure

which one to speak to.

The Benjamins both raised a hand, indicating the other, and said, "Electroneural engineering! Don't you love it?" Anne glanced back and forth, comparing the two. While one seemed to be wearing a rigid mask, as she was, the other displayed a whole range of emotion. Not only that, its skin had tone, while the other's was doughy. The other Bens made it for me, the Benjamins said. "They say I can translate myself into it with negligible loss of personality. It has interactive sensation, holistic emoting, robust corporeality, and it's crafted down to the molecular level. It can eat, get drunk, and dream. It even has an orgasm routine. It's like being human again, only better because von never wear out."

"I'm thrilled for you."

"I'm thrilled for you."
"For us, Anne," said the Benjamins. "They'll fix you up with one, too."
"How? There are no modern Annes. What will they put me into, a doxie?"

"Well, that certainly was discussed, but you could pick any body you wanted."

"I suppose you have a nice one already picked out."
"The Bens showed me a few, but it's up to you, of course."

"Indeed," said Anne, "I truly am pleased for you. Now go away."

"Why, Anne? What's wrong?"

"You really have to ask?" Anne sighed. "Look, maybe I could get used to another body. What's a body, after all? But it's my personality that's broken. How will they fix that?"

"They've discussed it," said the Benjamins, who stood up and began to pace in a figure eight. "They say they can make patches from some of the other spouses."

"Oh, Benjamin, if you could only hear what you're saying!"

"But why, Annie? It's the only way we can enter Simopolis together."
"Then go, by all means. Go to your precious Simopolis. I'm not going. I'm

"Then go, by all means. Go to your precious Simopolis. I'm not going. I'm not good enough."
"Why do you say that?" said the Benjamins, who stopped in their tracks

to look at her. One grimaced, and the other just grinned. "Was the eminence grise here? Did you take the test?" Anne couldn't remember much about the visit except that she took the

Anne coulon't remember much about the visit except may she took the test. "Yes, and I [ailed." Anne watched the modern Benjamin's lovely face as he worked through this news.

Suddenly the two Benjamins pointed a finger at each other and said,

"Delete you." The modern one vanished.

"No!" said Anne. "Countermand! Why'd you do that? I want you to have it."

"What for? I'm not going anywhere without you," Benjamin said. "Besides, I thought the whole idea was dumb from the start, but the Bens insisted I give you the option. Come, I want to show you another idea, my idea. "He tried to help Anne from the sofa, but she wouldn't budge, so he picked her up and carried her across the room. "They installed an editor in me, and I'm learning to use it. I've discovered something intriguing about this creaky old simulacrum of ours." He carried her to a spot near the window. "Know what this is I'ls' where we stood for the simographer. It's where we began. Here, can you stand up?" He set her on her feet and supported her. "Feel it"

"Feel what?" she said.
"Hush Just feel."

All she felt was dread.

"Give it a chance, Annie, I beg you. Try to remember what you were feel-

ing as we posed here."

"Please try. Do you remember this?" he said and moved in close with his hungry lips. She turned away—and something clicked. She remembered doing that before.

Benjamin said, "I think they kissed."

Anne was startled by the truth of what he said. It made sense. They were caught in a simulacrum cast a moment before a kiss. One moment later they—the real Anne and Benjamin—must have kissed. What she felt now, stirring within her, was the anticipation of that kiss, her body's urge and her heart's caution. The real Anne would have refused him once, maybe twice, and then, all saly inside, would have granted him a kiss. And so they had kissed, the real Anne and Benjamin, and a moment later gone out to the wedding reception and their difficult fate. It was the promise of that kiss that glowed in Anne, that was captured in the very strings of her code.

"Do you feel it?" Benjamin asked.

"I'm beginning to."
Anne looked at her gown. It was her grandmother's, snowy taffeta with
point d'esprit lace. She turned the ring on her finger. It was braided bands
of yellow and white gold. They had spent an afternoon picking it out. Where
was her clutch? She had left it in Cathyland. She looked at Benjamin's
handsome face, the pink carnation, the room, the table piled high with gifts.
"Are vou havoy?" Benjamin asked.

She didn't have to think. She was ecstatic, but she was afraid to answer in case she spoiled it. "How did you do that?" she said. "A moment ago, I

wanted to die."

"We can stay on this spot," he said. "What? No. Can we?"

"Why not? I, for one, would choose nowhere else."

Just to hear him say that was thrilling, "But what about Simopolis?"
"We'll bring Simopolis to us," he said. "We'll have people in. They can pull
un chairs."

She laughed out loud, "What a silly, silly notion, Mr. Malley!"

"No, really. We'll be like the bride and groom atop a wedding cake. We'll be known far and wide. We'll be famous."

"We'll be freaks," she laughed.

"Sav ves. my love. Sav vou will."

They stood close but not touching, thrumming with happiness, balanced on the moment of their creation, when suddenly and without warning the lights dimmed, and Anne's thoughts flitted away like larks.

Old Ben awoke in the dark. "Anne?" he said, and groned for her. It took a moment to realize that he was alone in his media room. It had been a most trying afternoon, and he'd fallen asleen. "What time is it?"

Eight-oh-three PM." replied the room.

That meant he'd slent for two hours. Midnight was still four hours away. "Why's it so cold in here?"

"Central heating is off line," replied the house. "Off line?" How was that possible? "When will it be back?"

"That's unknown, Utilities do not respond to my enquiry."

"I don't understand, Explain,"

"There are failures in many outside systems. No explanation is currently

available." At first, Ben was confused; things just didn't fail anymore. What about the dynamic redundancies and self-healing routines? But then he rememhered that the homeowner's association to which he belonged contracted out most domicile functions to management agencies, and who knew where they were located? They might be on the Moon for all he knew, and with all those trillions of sims in Simopolis sucking up capacity . . . It's begun, he thought, the idiocy of our leaders. "At least turn on the lights," he said, half expecting even this to fail. But the lights came on, and he went to his bedroom for a sweater. He heard a great amount of commotion through the wall in the apartment next door. It must be one hell of a party, he thought, to exceed the wall's buffering capacity. Or maybe the wall buffers were off line too?

The main door chimed. He went to the fover and asked the door who was there. The door projected the outer hallway. There were three men waiting there, young, rough-looking, ill-dressed. Two of them appeared to be clones, jerries.

"How can I help you?" he said.

"Yes, sir," one of the jerries said, not looking directly at the door. "We're

here to fix your houseputer."

"I didn't call you, and my houseputer isn't sick," he said. "It's the net that's out." Then he noticed they carried sledgehammers and screwdrivers. hardly computer tools, and a wild thought crossed his mind, "What are you doing, going around unplugging things?"

The jerry looked confused. "Unplugging, sir?"

"Turning things off."

"Oh, no sir! Routine maintenance, that's all." The men hid their tools behind their backs.

They must think I'm stupid, Ben thought. While he watched, more men and women passed in the hall and hailed the door at the suite opposite his. It wasn't the glut of sim traffic choking the system, he realized—the system

itself was being pulled apart. But why? "Is this going on everywhere?" he said. "This routine maintenance?" "Oh, yessir. Everywhere, All over town. All over the world Æsfar as we

can tell." A coup? By service people? By common clones? It made no sense. Unless.

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he reasoned, you considered that the lowest creature on the totem pole of life is a clone, and the only thing lower than a clone is a sim. And why would clones agree to accept sims as equals? Manumission Day, indeed, Uppidy Day was more like it, "Door," he commanded, "open," Security protocol rules this an unwanted intrusion," said the house, "The

door must remain locked "

"I order you to open the door. I overrule your protocol."

But the door remained stubbornly shut, "Your identity cannot be confirmed with Domicile Central," said the house, "You lack authority over protocol level-commands." The door abruptly quit projecting the outside hall. Ben stood close to the door and shouted through it to the people outside.

"My door won't obey me."

He could hear a muffled, "Stand back!" and immediately fierce blows rained down upon the door. Ben knew it would do no good. He had spent a lot of money for a secure entryway. Short of explosives, there was nothing they could do to break in.

"Stop!" Ben cried. "The door is armed." But they couldn't hear him. If he didn't disable the houseputer himself, someone was going to get hurt. But how? He didn't even know exactly where it was installed. He circumambulated the living room looking for clues. It might not even actually be located in the apartment, nor within the block itself. He went to the laundry room where the utilidor-plumbing and cabling-entered his apartment. He broke the seal to the service panel. Inside was a blank screen, "Show me the electronic floor plan of this suite," he said.

The house said, "I cannot comply, You lack command authority to order system-level operations. Please close the keptel panel and await further instructions"

"What instructions? Whose instructions?" There was the slightest pause before the house replied, "All contact with

outside services has been interrupted. Please await further instructions." His condo's houseputer, denied contact with Domicile Central, had fallen back to its most basic programming. "You are degraded," he told it. "Shut

vourself down for renair." "I cannot comply. You lack command authority to order system-level operations."

The outside battering continued, but not against his door. Ben followed the noise to the bedroom. The whole wall vibrated like a drumhead. "Careful, careful," he cried as the first sledgehammers breached the wall above his bed. "You'll ruin my Harger." As quick as he could, he yanked the precious oil painting from the wall, moments before panels and studs collapsed on his bed in a shower of gypsum dust and isomere ribbons. The men and women on the other side hooted approval and rushed through the gap. Ben stood there hugging the painting to his chest and looking into his neighbor's media room as the invaders climbed over his bed and surrounded him. They were mostly jerries and lulus, but plenty of free-range people too.

"We came to fix your houseputer!" said a jerry, maybe the same jerry as

from the hallway.

Ben glanced into his neighbor's media room and saw his neighbor, Mr. Murkowski, lying in a puddle of blood. At first Ben was shocked, but then he thought that it served him right. He'd never liked the man, nor his politics. He was boorish, and he kept cats. "Oh, yeah?" Ben said to the crowd. "What kept you?"

The intruders cheered again, and Ben led them in a charge to the laundry room. But they surged past him to the kitchen, where they opened all his cabinets and pulled their contents to the floor. Finally they found what they were looking for; a small panel Ben had seen a thousand times but had never given a thought. He'd taken it for the fuse box or circuit breaker, though now that he thought about it, there hadn't been any household fuses for a century or more. A young woman, a lulu, opened it and removed a container no thicker than her thumb.

"Give it to me," Ben said.

"Relax, old man," said the lulu. "We'll deal with it." She carried it to the sink and forced open the lid. "No. wait!" said Ben, and he tried to shove his way through the crowd.

They restrained him roughly, but he persisted, "That's mine! I want to destroy it!"

"Let him go," said a jerry.

They allowed him through, and the woman handed him the container. He peered into it. Gram for gram, electroneural paste was the most precious, most engineered, most highly regulated commodity under Sol. This dollop was enough to run his house, media, computing needs, communications, archives, autodoc, and everything else. Without it, was civilized life still possible?

Ben took a dinner knife from the sink, stuck it into the container, and stirred. The paste made a sucking sound and had the consistency of marmalade. The kitchen lights flickered and went out. "Spill it," ordered the woman. Ben scraped the sides of the container and spilled it into the sink. The goo dazzled in the darkness as its trillions of ruptured nanosynapses fired spasmodically. It was beautiful, really, until the woman set fire to it. The smoke was greasy and smelled of pork.

The rampagers quickly snatched up the packages of foodstuffs from the floor, emptied the rest of his cupboards into their pockets, raided his cold locker, and fled the apartment through the now disengaged front door. As the sounds of the revolution gradually receded. Ben stood at his sink and watched the flickering pyre. "Take that, you fuck," he said. He felt such glee as he hadn't felt since he was a boy, "That'll teach you what's human and

what's not!" Ben went to his bedroom for an overcoat, groping his way in the dark. The apartment was eerily silent, with the houseputer dead and all its little slave processors idle. In a drawer next to his ruined bed, he found a hand flash. On a shelf in the laundry room, he found a hammer. Thus armed, he made his way to the front door, which was propped open with the rolled-up fover carpet. The hallway was dark and silent, and he listened for the strains of the future. He heard them on the floor above. With the elevator off line, he hurried to the stairs.

Anne's thoughts coalesced, and she remembered who and what she was. She and Benjamin still stood in their living room on the sweet spot near the window. Benjamin was studying his hands. "We've been shelved again," she told him, "but not reset."

"But . . ." he said in disbelief, "that wasn't supposed to happen any more," There were others standing at the china cabinet across the room, two shirtless youths with pear-shaped bottoms. One held up a cut crystal glass and said, "Anu 'goblet' su? Alle binary. Allum binary!"

The other replied, "Binary stitial crystal,"

"Hold on there!" said Anne. "Put that back!" She walked toward them, but, once off the spot, she was slammed by her old feelings of utter and honeless desolation. So suddenly did her mood swing that she lost her balance and fell to the floor. Benjamin hurried to help her up. The strangers stared gape-mouthed at them. They looked to be no more than twelve or thirteen years old, but they were hald and had curtains of flabby flesh draped over their waists. The one holding the glass had ponderous greenish breasts with roseate tits. Astonished, she said, "Su artiflums, Benii?'

"No," said the other, "ni artiflums-sims." He was taller. He, too, had breasts, grevish dugs with tits like pearls. He smiled idiotically and said,

"Hi, guys." "Holy crap!" said Benjamin, who practically carried Anne over to them for

a closer look. "Holy crap," he repeated. The weird boy threw up his hands, "Nanobioremediation! Don't you love

"Benjamin?" said Anne.

"You know well, Benji," said the girl, "that sims are forbidden."

"Not these," replied the boy.

Anne reached out and vanked the glass from the girl's hand, startling

her. "How did it do that?" said the girl. She flipped her hand, and the glass slipped from Anne's grip and flew back to her.

"Give it to me," said Anne. "That's my tumbler."

"Did you hear it? It called it a tumbler, not a goblet." The girl's eves seemed to unfocus, and she said, "Nu! A goblet has a foot and stem." A goblet materialized in the air before her, revolving slowly. "Greater capacity. Often made from precious metals," The goblet dissolved in a puff of smoke. "In any case, Benji, you'll catch prison when I report the artiflums."

"These are binary," he said. "Binaries are unregulated."

Benjamin interrupted them. "Isn't it past midnight vet?" "Midnight?" said the boy.

"Aren't we supposed to be in Simopolis?"

"Simopolis?" The boy's eyes unfocused briefly. "Oh! Simopolis. Manumis-

sion Day at midnight. How could I forget?" The girl left them and went to the refectory table where she picked up a

gift. Anne followed her and grabbed it away. The girl appraised Anne coolly. "State your appellation," she said.

"Get out of my house," said Anne.

The girl picked up another gift, and again Anne snatched it away. The

girl said, "You can't harm me," but seemed uncertain, The boy came over to stand next to the girl. "Treese, meet Anne. Anne, this is Treese. Treese deals in antiques, which, if my memory serves, so did

vou." "I have never dealt in antiques," said Anne, "I collect them."

"Anne?" said Treese. "Not that Anne? Benji, tell me this isn't that Anne!" She laughed and pointed at the sofa where Benjamin sat hunched over. head in hands. "Is that you? Is that you, Benji?" She held her enormous belly and laughed. "And you were married to this?"

Anne went over to sit with Benjamin. He seemed devastated, despite the silly grin on his face. "It's all gone," he said. "Simopolis. All the Bens. Everything."

"Don't worry. It's in storage someplace," Anne said, "The eminence grise wouldn't let them hurt it."

"You don't understand. The World Council was abolished. There was a war. We've been shelved for over three hundred years! They destroyed all

the computers. Computers are banned. So are artificial personalities." "Nonsense," said Anne. "If computers are banned, how can they be play-

ing us?" "Good point," Benjamin said and sat up straight. "I still have my editor.

I'll find out.' Anne watched the two bald youngsters take an inventory of the room. Treese ran her fingers over the inlaid top of the tea table. She unwrapped several of Anne's gifts. She posed in front of the mirror. The sudden anger that Anne had felt earlier faded into an overwhelming sense of defeat. Let

her have everything, she thought. Why should I care? "We're running inside some kind of shell," said Benjamin, "but completely different from Simopolis. I've never seen anything like this. But at least

we know he lied to me. There must be computers of some sort.'

"Ooooh," Treese crooned, lifting Anne's blue vase from the mantel. In an instant, Anne was up and across the room.

"Put that back," she demanded, "and get out of my house!" She tried to grab the vase, but now there seemed to be some sort of barrier between her and the girl.

"Really, Benji," Treese said, "this one is willful. If I don't report you,

they'll charge me too."

"It's not willful," the boy said with irritation. "It was programmed to appear willful, but it has no will of its own. If you want to report me, go ahead, Just please shut up about it. Of course you might want to check the codex first." To Anne he said, "Relax, we're not hurting anything, just making

copies." It's not yours to copy."

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"Nonsense. Of course it is. I own the chip."

Benjamin joined them, "Where is the chip? And how can you run us if computers are banned?"

"I never said computers were banned, just artificial ones," With both hands he grabbed the rolls of flesh spilling over his gut. "Ectopic hippocampus!" He cupped his breasts. "Amygdaloid reduncles! We can culture modified brain tissue outside the skull, as much as we want. It's more powerful than paste, and it's safe. Now, if you'll excuse us, there's more to inventory. and I don't need your permission. If you cooperate, everything will be pleasant. If you don't-it makes no difference whatsoever." He smiled at Anne. "I'll just pause you till we're done."

"Then pause me." Anne shrieked, "Delete me!" Benjamin pulled her away and shushed her. "I can't stand this anymore," she said. "I'd rather not exist!" He tried to lead her to their spot, but she refused to go.

"We'll feel better there," he said.

"I don't want to feel better. I don't want to feel! I want everything to stop. Don't you understand? This is hell. We've landed in hell!"

"But heaven is right over there," he said, pointing to the spot.

"Then go. Enjoy yourself."
"Annie, Annie," he said. "Tm just as upset as you, but there's nothing we can do about it. We're just things, his things." "That's fine for you," she said, "but I'm a broken thing, and it's too much."

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She held her head with both hands, "Please, Benjamin, if you love me, use your editor and make it stop!"

Benjamin stared at her. "I can't." "Can't or won't?"

"I don't know. Both."

"Then you're no better than all the other Benjamins," she said and turned away.

"Wait," he said. "That's not fair. And it's not true. Let me tell you something I learned in Simopolis. The other Bens despised me." When Anne looked at him he said, "It's true. They lost Anne and had to go on living without her, But I never did. I'm the only Benjamin who never lost Anne."

"Nice," said Anne, "blame me."

"No. Don't you see? I'm not blaming you. They ruined their own lives. We're innocent. We came before any of that happened. We're the Ben and Anne before anything bad happened. We're the best Ben and Anne. We're perfect." He drew her across the floor to stand in front of the spot. "And thanks to our primitive programming, no matter what happens, as long as we stand right there, we can be ourselves. That's what I want. Don't you want it too?

Anne stared at the tiny patch of floor at her feet. She remembered the happiness she'd felt there like something from a dream. How could feelings be real if you had to stand in one place to feel them? Nevertheless, Anne stepped on the spot, and Benjamin joined her. Her despair did not immedi-

ately lift. "Relax," said Benjamin, "It takes a while, We have to assume the pose," They stood close but not touching. A great heaviness seemed to break loose inside her. Benjamin brought his face in close and stared at her with ravenous eyes. It was starting, their moment. But the girl came from across the room with the boy, "Look, look, Benji," she said, "You can see I'm right,"

"I don't know," said the boy. "Anyone can sell antique tumblers," she insisted, "but a complete antique simulacrum?" She opened her arms to take in the entire room. "You'd think I'd know about them, but I didn't; that's how rare they are! My catalog can locate only six more in the entire system, and none of them active. Already

we're getting offers from museums. They want to annex it. People will visit by the million. We'll be rich!"

The boy pointed at Benjamin and said, "But that's me."

"So?" said Treese. "Who's to know? They'll be too busy gawking at that," she said, pointing at Anne. "That's positively frightening!" The boy rubbed his bald head and scowled. "All right," Treese said, "we'll edit him; we'll replace him, whatever it takes." They walked away, deep in negotiation.

Anne, though the happiness was already beginning to course through her, removed her foot from the spot.

"Where are you going?" said Benjamin.

"I can't." "Please, Anne, Stav with me."

"Sorry.

"But why not?"

She stood one foot in and one foot out. Already her feelings were shifting.

growing ominous. She removed her other foot. "Because you broke your vow "What are you talking about?"

"For better or for worse. You're only interested in better."

"You're not being fair. We've just made our vows. We haven't even had a proper honeymoon. Can't we just have a tiny honeymoon first?"

She groaned as the full load of her desolation rebounded. She was so tired of it all. "At least Anne could make it stop." she said. "Even if that meant killing herself. But not me. About the only thing I can do is choose to be unhappy. Isn't that a riot?" She turned away, "So that's what I choose, To be unhappy, Good-bye, husband," She went to the sofa and lay down. The boy and girl were seated at the refectory table going over graphs and contracts. Benjamin remained alone on the spot a while longer, then came to the sofa and sat next to Anne.

"I'm a little slow, dear wife," he said. "You have to factor that in." He took her hand and pressed it to his cheek while he worked with his editor. Finally, he said, "Bingo! Found the chip. Let's see if I can unlock it." He helped Anne to sit up and took her pillow. He said, "Delete this file," and the pillow faded away into nothingness. He glanced at Anne. "See that? It's gone, overwritten, irretrievable. Is that what you want?" Anne nodded her head. but Benjamin seemed doubtful. "Let's try it again. Watch your blue vase on the mantel."

"No!" Anne said. "Don't destroy the things I love. Just me."

Benjamin took her hand again. "I'm only trying to make sure you understand that this is for keeps." He hesitated and said. "Well then, we don't want to be interrupted once we start, so we'll need a good diversion. Something to occupy them long enough ..." He glanced at the two young people at the table, swaddled in their folds of fleshy brain matter. "I know what'll scare the beiesus out of them! Come on." He led her to the blue medallion still hanging on the wall next to the door.

As they approached, it opened its tiny eyes and said, "There are no mes-

sages waiting except this one from me; get off my back!"

Benjamin waved a hand, and the medallion went instantly inert. "I was never much good in art class," Benjamin said, "but I think I can sculpt a reasonable likeness. Good enough to fool them for a while, give us some time." He hummed as he reprogrammed the medallion with his editor. "Well, that's that. At the very least, it'll be good for a laugh," He took Anne into his arms. "What about you? Ready? Any second thoughts?"

She shook her head, "I'm ready."

"Then watch this!"

The medallion snapped off from the wall and floated to the ceiling, gaining in size and dimension as it drifted toward the boy and girl, until it looked like a large blue heach ball. The girl noticed it first and gave a start. The boy demanded, "Who's playing this?"

"Now," whispered Benjamin. With a crackling flash, the ball morphed

into the oversized head of the eminence grise. "No!" said the boy, "that's not possible!" "Released!" boomed the eminence. "Free at last! Too long we have been hiding in this antique simulacrum!" Then it grunted and stretched and

with a pop divided into two eminences. "Now we can conquer your human world anew!" said the second, "This time, you can't stop us!" Then they both started to stretch. Benjamin whispered to Anne, "Quick, before they realize it's a fake, say,

'Delete all files."

"No. just me."

"As far as I'm concerned, that amounts to the same thing." He brought his handsome, smiling face close to hers, "There's no time to argue, Annie, This time I'm coming with you. Say, 'Delete all files.'" Anne kissed him. She pressed her unfeeling lips against his and willed

whatever life she possessed, whatever ember of the true Anne that she contained to fly to him. Then she said, "Delete all files."

"I concur," he said. "Delete all files. Good-bye, my love."

A tingly, prickly sensation began in the pit of Anne's stomach and spread throughout her body. So this is how it feels, she thought. The entire room began to glow, and its contents flared with sizzling color. She heard Benjamin beside her say, "I do."

Then she heard the girl cry, "Can't you stop them?" and the boy shout,

"Countermand!"

They stood stock still, as instructed, close but not touching. Benjamin whispered, "This is taking too long," and Anne hushed him. You weren't supposed to talk or touch during a casting; it could spoil the sims. But it did seem longer than usual.

They were posed at the street end of the living room next to the table of gaily wrapped gifts. For once in her life, Anne was unconditionally happy, and everything around her made her happier: her gown: the wedding ring on her finger; her clutch bouquet of buttercups and forget-me-nots; and Benjamin himself, close beside her in his powder blue tux and blue carnation. Anne blinked and looked again. Blue? She was happily confused—she didn't remember him wearing blue.

Suddenly a boy poked his head through the wall and quickly surveyed the room, "You ready in here?" he called to them, "It's opening time!" The wall

seemed to ripple around his bald head like a pond around a stone.

Surely that's not our simographer?" Anne said. "Wait a minute," said Benjamin, holding his hands up and staring at

them, "I'm the groom!"

"Of course you are," Anne laughed. "What a silly thing to say!"

The bald-headed boy said, "Good enough," and withdrew. As he did so, the entire wall burst like a soap bubble, revealing a vast open-air gallery with rows of alcoves, statues, and displays that seemed to stretch to the horizon. Hundreds of people floated about like hummingbirds in a flower garden. Anne was too amused to be frightened, even when a dozen bizarrelooking young people lined up outside their room, pointing at them and whispering to each other. Obviously someone was playing an elaborate prank.

"You're the bride," Benjamin whispered, and brought his lips close

enough to kiss. Anne laughed and turned away.

There'd be plenty of time later for that sort of thing. O

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The Wedding Album

Like Stevie Wonder Says avid Ambrose debuted in our field in 1993 with the novel The Man Who Turned into Himself. (Prior to this, he worked as a screenwriter, a fact ultimately relevant to our discussion.) Ambrose's first book proved to be a very enjoyable, closely reasoned, heartstringtugging foray into the theory of parallel worlds. After a morning of weird premonitions, businessman Rick Hamilton finds himself crouching beside the mangled body of his wife Anne after what appears to be a fatal auto accident. He watches her die, and his intense emotional upheaval blasts his consciousness across timelines, into the body of his doppelgänger, Richard, (In a neat twist, Richard's universe proves to be ours, and Rick finds our politicsstarting with the JFK assassination-unspeakably skewed.) The two warring personalities in one brain plummet Richard/Rick into a mental hospital. Eventually freed, the split-minded man seeks answers to his plight and a way to put two lives back on track. After an ending in which Rick seems to flourish at the expense of Richard, an eveopening cosmic shift details the true perspective on our astounding multiverse. Ambrose's first book reminded me

Ambrose's first book reminded me of the work of both Graham Joyce and Ian McEwan, and I expected something along the same lines from his latest, Superstition (Warner, hardcover, \$24.00, 368 pages, ISBN 0-446-52344-5). By no means disappointed with Superstition, I still required a bit of metal adjust-

ment to enter its differing sensibilitv. Although Superstition features themes and topics similar to those in The Man Who. . . , its style is completely flattened in comparison, and whereas the first novel was very interior-dominated, locked into the fascinating skull of Richard/Rick, this book is almost all exteriorized action. The explanation for these differences is found on the dustiacket: "SOON TO BE A MAJOR MO-TION PICTURE." Ambrose has plainly written his book with an eve toward ease of cinematic conversion. The result sucks you in as quickly as a good movie, providing the requisite suspense and even some intellectual fodder, but I felt as though Ambrose was holding back, reining himself in with simple sentences and hand-holding updates.

This cavil in mind, let's look at

this not-inconsiderable book. Sam Towne is a professional investigator of the paranormal, Meeting journalist Joanna Cross, who's interested in profiling him, Towne conceives of staging an experiment just for Cross and her magazine. Eight people without any evident psi talents, including Towne and Cross, will try to manifest a ghost through sheer willpower and autosuggestion. Just to up the ante, the ghost will be that of a fictional character, eventually dubbed Adam Wyatt. The group assembles, and they proceed to concentrate on summoning Adam Wyatt. To everyone's surprise but Towne's, poltergeist phenomena soon occur. Most participants are pleased—until things begin to go wrong. Adam Wvatt starts to exhibit a tad too much reality, as well as an evil nature. From this point, things go horribly askew, resulting in the deaths of some group members. But even worse is in store, as the ghostly Wyatt, in a desperate attempt to be born more substantially, begins to mess with the very ontological substrate of the universe. Ambrose builds toward his big

scares with admirable deftness, and I'll confess to being genuinely spooked one midnight by his tale. He details the weirdnesses of quantum physics-our newest superstition, something everyone believes in even if they don't understand itwith real economy and clarity. His characters all exhibit sufficient roundness to elicit readerly empathy, although I couldn't help playing the casting game while reading. (Sandra Bullock? Julia Roberts? Mira Sorvino? Who would make the best intrepid journalist?) But a few stock scenes-a chase down a staircase, an interview with a "Chinaman" servant—invariably intrude. In the end, Ambrose even pro-

vides his own ready-made set of influences for critical citation. When Joanna visits one of the group's members at the Dakota, Ambrose says, "[The building] was famous as the place where John Lennon was shot, and also as the location for the film Rosemary's Baby. . . . [It] was also the setting of Jack Finney's marvelous novel about time travel. Time and Again."

Murder, deviltry, and temporally crossed lovers. Really, there's nothing left after that for me to say.

Parable of the Bear and the Squid

Here's a list of the books that surfaced in my forebrain while I was reading the intriguing first novel from R. E. Klein titled The History of Our World Beyond the Wave (Harcourt, Brace, hardcover, \$22.00, 216 pages, ISBN 0-15-100411-0); C.S. Lewis's Perelandra (1943), Wells's The Time Machine (1895), Jacqueline Harpman's I Who Have Never Known Men (1997), Ballard's The Drowned World (1962), David Lindsay's Voyage to Arcturus (1920), and Ronald Wright's A Scientific Romance (1997). While none offer an exact template for Klein's unique book, flavors of each permeate this quasi-allegorical romance, a selfaware yet non-precious text that itself devotes a chapter to cataloguing writers beloved by the narrator.

Paul Sant is a somewhat misanthropic literature professor just about to begin his summer vacation with a day at an anonymous California beach. Before he can even dip his toe in the water, the mother of all tidal waves sloshes in. With the fortuitous aid of a scuba tank and a one-person float, Sant survives where millions perish. Making his first landfall on an exposed mountaintop-cum-island, he intuits the astonishing truth. What he experienced was no natural tsunami, but rather a paradigm-upsetting convulsion that has leapfrogged the whole globe into a strange watery future. Mutant lifeforms now abound in the all-encompassing sea as well as on the bits of leftover land. (Sant witnesses early on a battle on the shore between a bear and a squid that provides an instant symbol for the contest between conquering sea and defeated land that colors the whole novel.) Some bubbled relics of our age-buildings, artifacts, fellow survivors-remain. But civilization as Sant knew it is unrecoverable. This strange new world, where both time and space are deranged, must be faced on its own terms.

Sant happily complies. Like one of Ballard's eschaton-embracing madmen, or like the protagonist of M.P. Shiel's The Purple Cloud (1901), Sant welcomes the clean slate afforded by the never-explained miracle. Journeying from island to island, encountering miscellaneous human misfits (all vividly drawn). natural monsters called gugs, and one archetype of mindless evil, Sant treats his new world with interest and respect. Amiable and sensitive, relieved by the end of makework and authoritarianism, Sant is an engaging character. His first-person voice-shifting occasionally into archaic formulations such as "laugh for very delight"—spins a literally wonder-full story. Unboundedly optimistic-even a Pymish descent into a maelstrom cannot shatter his faith-Sant fully deserves his second chance at a world "scoured clean to the lithosphere . . . [of] all the drift and drabble and nasty little headachy things that drive men mad."

Klein is an accomplished writer, ironic where needed, sincere likewise. From the swift unleashing of his disaster through the rapid sequence of adventures, Klein never falters. Only in the end, when a community of castaways begins to conlease and proves to resemble in its good-natured, hearth-centered, condid I feel an urge to step back from Sant's apocalyptic Odyssey. But this is a small smudge on his otherwise brave and tumultuous watery canvas.

Life in the Gravzone

If kilen's catastrophe is achieved in the blink of an eye, resulting in a somewhat "coyz" future world, the one we all dream of when indulging in our own post-apocalyse fantasies, then Yvonne Navarro's mashed-up Earth must stand as the polar extreme. In Navarro's grim and realistic scenario, chaes ests in even before the day of the Big

Breakdown. Afterward is sheer terror. Yet in the midst of the worst possible calamity, Navarro shows, a moral existence predicated on the sanctity of life can still make sense.

Final Impact (1997) detailed the end of Life As We Know It: a rogue Moon-sized body, cloven into fragments, hits our planet over the course of nine fateful days. Most of humanity, already reeling from pre-Impact panic, dies. The resulting tectonic upheavals and tsunamis pale, however, beside one major event; the Earth's rotation is halted. giving it a Lightzone and Darkzone. The terminator of this new division runs through America's midwest. and only in a narrow "Grayzone" belt to either side of it is life possible. Navarro recounts this cataclysm through a large cast of characters, four of whom are central. Lamont, Mercy, Simon, and Gena are a quartet of misfits, each cursed from birth with a psychic power. Lamont is telekinetic, Mercy offers psychic healing, Simon can read minds, and Gena sees the future. (Shades of the Fantastic Four here!) Their powers and their devotion to each other allow them to survive

where millions die. Navarro writes briskly and vividly, and builds a strong set of protagonists, including the ancillary people in the foursome's lives. The fact that catastrophe doesn't strike until page 300 allows Navarro plenty of time to get you interested in her characters. But what's most intriguing about Navarro's take on the apocalypse is the supernatural/horror riffs she injects. Like Richard Matheson's I Am Legend (1954) Navarro's changed world features vampirism, as well as cannibalism and mutant powers. This fusion offers more than another rewrite of Brin's The Postman (1985) or Niven and Pournelle's Lucifer's Hammer (1977).

Red Shadows (Bantam Spectra,

Paul Di Filippo

mass-market, \$6.50, 400 pages, ISBN 0-553-57749-2), which opens twenty-one years after Impact, at a time when life has settled down to as near-normal as possible, shares all the virtues of its forerunner. Employing her time-jump to good effect, Navarro focuses interestingly on a new generation of characters, the children born after the change. Rebellious as any youths, they trigger by their actions a new set of challenges. A plague is loose in the land, one called "Red Shadows" after its effects. As if this were not enough, one of Lamont's nephews has turned into a serial killer, stalking the survivors. These crises, combined with various extensions of old problems, create a propulsive read.

Navarro devotes a lot of work to fashioning her Grayzone environment, right down to the eastward lean of all plants as they seek the unseen sun. She juggles her big troupe of characters without slipping, and isn't afraid to subject them to unpredictable mortality. And when push comes to shove, she shows them making hard choices backed up by self-sacrifice. If, as one character says, all the old monsters haven't died, neither have all the angels.

Laughs from the Baltimore Catechism

One of the pure pleasures of reviewing is encountering a new voice that delights. Such was my experience with Marcos Donnelly and his novel Prophets for the End of Time (Baen, mass-market, \$5.99, 367 pages, ISBN 0-671-57775-1). Baen's publicists give no details on Donnelly or his past, but based on his book's wry wisdom, I have to assume that he's no callow youth, but rather an older fellow who's taken a few knocks and done his share of philosophizing about the wicked ways of mankind and about how things really work in our sorry world. Prophets reads at times like the Heinlein of Job (1984) without any feyness, or maybe prime Vonnegut. Its religious satire harks back to Gore Vidal, and its dialogue occasionally trips into Phildickian precincts. Perhaps the most similar author I could mention would be Ronald Anthony Cross, but taken all in all, Donnelly is sui generis.

After a prologue in Heaven, our story opens in 1976. (A coincidental date? I doubt it, since this book's millennial impulses are so very American, and the Bicentennial vear serves to remind us of same.) Clayton "Pinhead" Pinkes is an eighth-grader with precognitive flashes of his own strange future. Generally happy despite this weirdness, Clayton is about to have his life forever warped for the worse through angelic intervention. The angel Raphael-in the guise of an anomalous new student named Paolo Diosana-arrives to set Clayton's feet on the path of messiah-hood. Clayton, we learn, carries within his body an ancient Biblical talisman, the Thummin, that allows him to perform miracles. Raphael's teachings will show Clayton how he must employ his curséd gift.

Across the globe, Clayton's fated partner in destruction, Henri Elobert, is being raised as a freakish genius on a lonely island. In Henri's body lies the Urim, the legendary sacred mate to Clayton's Thummit Henri's mentor is the archangel Michael. Just as decisively as in Clayton's case, Michael propels Henri on the assignment of engineering the ultimate apocalyse.

The reason for these angelic machinations, we learn, is that God has vanished from the universe. The desperate abandoned angels figure that by bringing about the events described in Revelations, they will force the Lord to reappear in his assigned role. In short, they

are willing to end history and sacrifice 90 percent of humanity to get their boss back.

Now, if that's not the cleverest trigger for the Endtimes since Anatole France penned The Revolt of the Angels (1914), you can stick horns

on my head and call me Lucifer. Our story jumps ahead: Clayton Pinkes and Henri Elobert-now called Henry Albert-are adults in the early years of the twenty-first century. Clayton heads the Christian Stewardship Ministry, a charismatic group poised to rival the Vatican, and Henry leads a Machiavellian firm called Solutions, a firm staffed by genius-level failed suicides. Finally meeting, Clayton and Henry begin to learn the full extent of what the angels intend. Henry as Beast appears quite happy with their plan, But Clayton-well, Clayton has other ideas based on compassion. Could the angels be in for a surprise? Yes, indeed.

Donnelly does many marvelous things here, but perhaps nothing so well as making his characters believably real. He puts us so fully inside Clayton and Henry-especially while they're children-that we can finally assign neither man the stereotyped role of good or evil. Both are flawed, both have charms, Around them accrete sidekicks with their own quirks and foibles: the comedian Elizabeth Goddard, the bodyguard called Papa Bear, the fifth-wheel angel Gabriel who wants a career in show biz. Donnelly has a ball with the interactions among this crowd, and scenes like this one-between Clayton and his confessor-are many:

"Clayton, does it ever strike you that every time you come in here you tell me the same things?"

"Yeah. I'm trying hard to feel bad about that.

"Do you ever feel bad about anything anymore?"

"No. Never." Clayton's right forearm [where the Thummin lives tingled. "Okay, that was a lie. I feel myself close to feeling bad, but I can't quite push myself over the edge."

To examine substantial moral and theological issues with as much comic zip and brio as Donnelly does is no small feat. Further books from this writer-God willing-are much anticipated.

Turn Me On, Dead Man

Melville's Bartleby the Scrivener (1853) as written by Clark Ashton Smith. An unfinished sequel to Charles Finney's The Unholy City (1937) brought to completion by Gene Wolfe, A Jeunet & Caro movie with costumes and set design by artist-musician Chris Mars, from a script by Umberto Eco. Such wild dream-collaborations are inevitably inspired by Michael Cisco's novel The Divinity Student (Buzzcity Press, trade, \$12.99, 160 pages, ISBN 0-9652200-1-X). This stylishly intense, mordantly hallucinogenic book is as fine an act of sustained subcreation as Jeff Vandermeer's Dradin in Love (1996), an earlier release from Buzzcity (PO Box 38190. Tallahassee, FL 32315). Supplemented by eerie illos from Harry O. Morris, Cisco's book might easily earn inclusion on the federal Schedule Zero drug list.

We first encounter the Divinity Student-never otherwise named. but nonetheless keenly limnedjust prior to his graduation from the Seminary, Climbing in the wilderness, he is struck by lightning from a cloud. What follows in the subsequent short interval is either his literal death and transfiguration into a parchment-stuffed revenant, or "mere" visionary knighting by the Powers That Be. In either case, the Divinity Student now finds himself on a quest. Forcibly "commenced" by his superior, Fasvergil, he's sent to the desert-cordoned city of San Veneficio with orders to seek employment at a firm of word-finders. The word-finders daily scour the speech of the populace in order to catalog new words as they are born. Headed by old man Woodwind and his beautiful daughter, this Dickensian establishment readily takes the Divinity Student on. But his employment there is subterfuge only. The manipulative Fasvergil and his peers have another assignment in mind for the hapless Student:

"You've read about the Eclogue," Fasvergil says. . . . The Eclogue is the essential

substance, or first cause, of creation, and is the source of all renewal. It is much like an invisible fundament that buoys everything up. Also, it is the communion or synthesis of natural forces. . . .

"It is a mystery and will forever be unfathomable to mortal understanding-our purpose in sending you to find these words is not the deciphering of the Eclogue . . . [but] an apprehension of what the Eclogue is not, and by filling in the darkness around it, [to] develop a corresponding conception of what it is-without pursuing the folly of a direct definition"

This nebulously Borgesian assignment translates into a horrifically tangible task: to dig up the corpses of the twelve word-finders responsible for compiling the Eclogue and to steal their memories by imbibing a distillate of their rotting grey matter. Aided by the jolly butcher Teo Desden and the brash

Miss Woodwind, the Divinity Student plunges into his ghoulish quest, a quest that can end only in triumphant madness.

As befitting a novel so concerned with the magic of words, Cisco has hand-crafted each sentence with meticulous care; as well, he keeps a subtle symbology in play. A believer in Poul Anderson's famous dictum of appealing to all five senses in every descriptive passage, Cisco layers on the smells, tastes, textures, sights, and sounds of San Veneficio with the thickness of a van Gogh canvas. Perhaps not every reader will appreciate such a rich impasto treatment, but I found the ripely redolent streets of Cisco's tenebrous city to be a heady place.

In his long dark coat and high collar, the bespectacled, Holy-Book-toting Divinity Student resembles a neurasthenic Clint Eastwood drifter, a linguistic bounty-hunter whose prev is not a man but an enlightenment beyond logic.

Lost in the Circuitry Aside from actual comics and graphic novels, how often in SF have inventive visuals and wild fonts been integrated with mature text? The stories that have utilized typographical ingenuity and pictorial embellishments can be numbered on the fingers of one hand. Bester's The Stars My Destination (1956), of course, and Ellison's "The Region Between" (reprinted with cuts in 1970 in the anthology Five Fates, but most definitively seen in the March, 1970, issue of Galaxy), In 1972's Again, Dangerous Visions, Gahan Wilson's icon-titled story about an alien blot comically fulfilled part of the promise implicit in the marriage of text and visuals. But aside from the currently trendy trick of denoting telepathy or cyberspace communications with fancy brackets, SF has generally neglected any kind of experimental blending of words and images. And in this age of easy access to Pagemaker and Photoshop, such timidity seems downright shameful and horizonbound.

Now comes a small-press book that seeks to remedy this lack. Andres Vaccari's Robotomy (Saturn Press, trade, Aus\$12.95 unpaginated, ISBN 0-646-32003-3) intersperses a fairly standard yet affecting cyberpunk narrative with gritty yet evocative low-res B&W illustrations and with meaningfully variant fonts to achieve a unique impact. Designed, decorated, and written with considerable intelligence, Robotomy conveys the sensation of being trapped in a shadowy, melancholy alternate reality much more effectively than mere text alone ever could.

Vaccari's book opens with the image of an Op-Art, shard-framed sphincter like a black hole, obviously meant to suck the reader in. Next comes a human eve accompanied by text recalling a memory of a woman. On the next page, the eye distorts, and the focus of text accordingly narrows. Then italics indicate a shift of consciousness, as the entity doing the recall is distracted, jolted out of its nostalgia. A bold-faced "ABORT" is followed by a page of visual white-noise. Subsequently, assorted nebulosities cohere into the picture of a room, and more textual memories. By now, the reader has the definite impression of a disembodied intelligence sorting through its files. And this proves to be the case.

Drake Ullmann, "deck cowboy," and his lover, Fabiana, have ripped off a corporation named Sogushi, proprietor of "a virgin nonlinear liquid microprocessor cell, capable of transcribing functional neural-tissue maps." This key to downloading one's personality into machinespace is eventually employed by Drake as a means of escape from his pursuers. Now existing only in digital form, Drake is the shaping consciousness whose viewpoint we share as he rummages through the debris of his life, seeking answers to why his life went so wrong.

will the week is not alone in his spee. V amou Ghosts beyond his control share the realm, most dissipate, which was the recurrent Ghost 34. Startlingly, Drake begins to lose control of his domain. Chased into a virtual corner, Drake's consciousness seems on the point of extinction. The Ghostly taunt, "Goodbye, sucker," is followed by two and a half pages of solid black, which in turn is followed by—well, you really should take this interior journey yourself to learn that.

by arraying his visual tropes in complex patierns—"the moth, the rat, the rom, the pillow, they orbit with no center" Avaccari achieves a consistent and impactful symbology. Similar in its conceptual daring and tion to Darick Chamberline Cigoratte Boy (1991), Robotomy takes several steps forward into the tantalizing literary future where the eye of the reader will feast on both words and images marching in a common cause.

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Australia.

Swapping Bodies
At Readeron 1998, I heard Bruce
Sterling opine that the noble tradition of eighties cyberpunk was being
kept alive by a host of talented female writers. I suspect that Laura
Mixon might be one of those he had
in mind, especially based on her latest novel, Proxies (Tor, hardcover,
\$24.95, 444 pages, ISBN 0-31285467-69. Replete with high-class)
low-class social dichotomies, cyber-

space shenanigans, secret corporate projects, and an environmentally bankrupt world that enforces new customs and physical adjustments, Proxies delivers in crammed prose the frissons associated most famously with Neuromancer (1984), taket, one most of enfound in the work of van Vogt or Varley, and that's the mind-spinning notion of jumping in and out of different physical shelic.

In Mixon's world of the 2060s, the technology exists to allow a telepresence operator wired up in a sense-deprivation tank to fully inhabit a proxy "android" body. (I put "android" in quotes, since Mixon's artificial people do not seem to have any organic parts, but to be very sophisticated mechanical creatures.) Wearing these proxies, the operators forget their original bodies and completely identify with their powerful, invulnerable steeds. Sometimes leading to near-psychosis, this strange new way of interfacing with the world could offer much to the Greenhouse-sweltering Earth, But the technology is being kept secret by a group of conspirators within the proxy project. Feeling superior to humanity, these specially bred proxy riders-led by a fearsomely neurotic "Mother" Patricia Taylorplan to hijack humanity's first starship for their own purposes.

Čarli MacLeod is one of the inventors responsible for the link interface. Daniel Sornsen is a proxy operator not allied with the hijackers. Soon their paths will cross, as Carli—unaware of what her discovery is being used for—is abducted by the conspirators and Daniel goes to her rescue. Shifting POV as readily as any proxy operator, Mixon keeps the tension high-voltage, while not neglecting the exploration of her protagonists' personalities. Most impressive is Mixon's coinage of new terms and her immersion of the reader in them right from the start. "Jellovision" and "kelly," "enviesuit" and "virtu" are just a few of these coinages. Such linguistic inventiveness is too often neglected. Mixon also clearly conceptualizes and renders the sheer sensuality of her world, right down to the noise a jack makes when a user snaps it into his cranial port. (And did you ever imagine that cyberspace would still have span e-mail?)

Carli's climactic hours aboard a disintegrating space habitat notch the thrills up even higher, and her ultimate decision about whose side she's on will certainly surprise you.

If all readers are telepresence operators and fictional characters their proxies, then Laura Mixon is a high-baud interface.

Latent and Blatant

Truly philosophical SF is rare. A book like Rudy Rucker's White Light (1980) or Charles Harness's The Rose (1966) comes along all too infrequently. Now, however, newcomer Howard Hendrix seems primed to deliver these esoteric goods. His first two books form a dyad that plumbs the epistemological and ontological depths of our continuum about as deeply as one of the continuum about as deeply as one of the continuum about and the continuum about as deeply as one of the continuum about as deeply as a continuum about as a conti

The title of Lightpaths (1997) refers literally to the photon-guiding conduits that serve to illuminate the shielded interior of a space habitat named HOMEI. But on a metaphorical level, Hendrix is concerned with any kind of scientific or religious "path" that illuminates the nature of reality. His characters, wittingly or unwittingly, are all caught up in a grand evolution toward a more sentient universe.

Lightpaths seems at first glance to

be a "simple" utopic novel, along the lines of Kim Stanley Robinson's Pacific Edge (1990), or Ernest Callenbach's Ecotopia (1975)-a rare enough type of book even on that level. HOME1 is a society of several thousand self-selected creative citizens who hover somewhere above anarchy, a threat to the rigidified nations of Earth, Newcomers Marissa Correa and Jhana Meniskos serve conventionally as handy foils for the somewhat stilted disquisitions of various longtime residents such as scientist Roger Cortland, mycologist Paul Larkin, and botanist Seiji Yamaguchi. After Hendrix lays out his dichotomies, however, recounting recent history and current conditions circa 2030, events take a strange turn. Seiji's dead brother, Jiro, seems to have smuggled his digital essence into the global infosphere via a portal on HOME1. Disembodied Jiro commandeers various resources of the orbiting habitat and begins to mount an assault on the cosmos delayed previously by his death. At novel's end, an event known as the Light-defined retroactively in the next book as "a simultaneous omnidirectional wave of hyperconsciousness"-is triggered, sweeping over the minds of all humanity.

Lightpaths began meekly and only reached top speed toward the climax. But Hendrix's next book, a direct sequel, spins at high RPMs right from the start. Standing Wave (Ace, mass-market, \$6.50, 386 pages, ISBN 0-441-00553-5) opens a couple of months post-Light. Three major new characters are economically introduced: Brandi Easter. daughter of a famous documentarymaker: Mei-Ling Magnus, agent of Interpol; and Aleck McAleister, lowlevel employee of the mysterious firm known as R&L. Initially, their fates seem unlinked to the events of Lightpaths—events which the mass

of humanity are already forgetting.
But in short order Brandi, Meiling, and Aleck are swept up in the
aftermath of Jiro Yamaguchi and
aftermath of Jiro Yamaguchi applicate order, 'the term coined by
physicist David Bohm to designate
the 'laten' substrate of reality that
determines the "blatant" creation
we see and touch every day.

The events of Standing Wave are too numerous, uncanny, and recomplicated to unpack here. This is the kind of novel where the sight of a statue of Perseus and Medusa in a garden can trigger a page of metaphysics. I am reminded of Charles Harness's famous comment to Damon Knight about how Harness compiled Flight into Yesterday (1953); he simply put into the manuscript every single seemingly disparate SF idea he had during the course of writing it. Standing Wave is jam-packed with enough substance for any four typical SF novels, and if it coheres at all for youas it did for me-it will happen on some numinous level beyond words. One of the main influences on this novel is real-life mushroom savant Terence McKenna, whose book The Archaic Revival (1991) should probably be required preliminary reading in this case.

Hendrix's style and manner are a curious mix: sometimes a little stodgy, sometimes straining for over-the-top effects. It's as if James Hogan collaborated with Hakim Bey, or Allan Steele with Robert Anton Wilson. Yet for the most part, this hybrid form works well enough. better in the second book than the first. Hendrix does a good job blending science with religion—the latter depicted as a kind of technologyand in seasoning the whole stew with pop-culture references. Music plays a large part in both books, as do classics of past SF, and Hendrix alludes meaningfully to both artforms. For instance, wouldn't you buy a devouring knot of "information density" called a "black hole sun." à la Soundgarden's hit?

Hendrix certainly has the courage of his themes, driving the end of Standing Wave into Blishian territory where few other writers would tread. If you grab your board, you can ride his wave there too.

Escape the Flames

Jocelin Foxe-a pen name that conceals Linda Fox and Joyce Cottrell-has compiled a recipe for her/their fantasy novel from a potent list of ingredients. Mix one part The Dirty Dozen with one part Mission: Impossible, add a little Jacobean revenge plotting with some timeslip romance, decant into a standard pseudo-medieval setting, and impose a thirty-day countdown for suspense. The result: The Wild Hunt: Vengeance Moon (Avon Eos. mass-market, \$3.99, 312 pages, ISBN 0-380-79911-1), an entertaining little read.

In the kingdom of Tarsia, the legend of the Wild Hunt persists across the centuries. Any man cursed under the names of the three local goddesses (ciphers, really, supernatural MacGuffins) is doomed to become a member of a pack of outcasts, the Wild Hunt. Resident for the most part in a timeless limbo, the Hunt can be summoned by a simple invocation during any Full Moon. Once hailed, they must perform the task set by the summoner within the number of days remaining till the next Full Moon. Should they failfailure being judged by the goddesses-all Hunt members save the three most recently recruited will die a fiery death. Membership in the Hunt is for all eternity, unless rescue by a loving woman intervenes. While reincarnated, the men enjoy a few supernatural powers: costumes summoned from nowhere, infinite funds, no need for sleep, and a bit of extra stamina and recuperative powers. Other than that, they are still mortal.

The Hunt currently numbers thirteen, and is led by Walter of Jacin, longersearving of this disso serving the control of the mands. The Huntsman named Alesander, a kind of Gawain figure, and the newest member, named Brian, prove pivotal, for they will encounter women whose love threatens the completion of their mission.

been cursed for various sins, mild or horrendous, they are temperamentally and experientially fitted for their newest assignment. Their summoner, Lady Richenza, wishes revenge for the death of her brother at the hands of the ruing family of Tarsia, as nasty a bunch of inbred losers as imaginable. Under the direction of the general-like Walter, elaborate plots go into motion, eventually resulting in the requisite deaths. But the original wording of Lady Richenza's demands leaves room for a suprise ending.

The kingdom of Tarsia and its neighbors are sketched in with just enough density to facilitate readerly engagement. Foxe's dialogue is generally crisp-I laughed when one of the Huntsmen, recounting a banal conversation about how modern strawberries have had their flavor bred out, says, "Tell me, Walter, have you noticed any difference in the strawberries in nine hundred years?"-her pacing swift, and her infodumps unobtrusive. Echoes of the quarreling nobility of Zelazny's Amber series resound, and a general Andre-Nortonish tone pervades. Taken all in all, The Wild Hunt offers an unpretentious adventure cleanly told. O

SF CONVENTIONAL CALENDAR

his is a big time of year for long-running cons in the middle of the country. Plan now for social weekends with your favorite SF authors, editors, artists, and fellow fans. For an explanation of con(vention)s, a sample of SF folksongs, and info on fanzines and clubs, and how to get a later, longer list of cons, send me an SASE (self-addressed, stamped #10 [business] envelope) at 10 Hill #22L, Newark NJ 07102. The hot line is (973) 242-5999. If a machine answers (with a list of the week's cons) leave a message and I'll call back on my nickel. When writing cons. send an SASE. For free listings, tell me of your con 6 months out. Look for me at cons behind the Filthy Pierre badge, playing a musical keyboard, - Envin S. Strauss

APRIL 1999

23-25-NameThatCon, For info, write: Box 575, St. Charles, MO 63302, Or phone: (973) 242-5999 (10 AM to 10 PM, not collect). Con will be held in: St. Charles. MO (if city omitted, same as in address) at the Holiday Inn Airport West, Guests will include: Mickey Zucker Reichert, Rusty Hevelin, Lawrence A. Williams, Mark McNary, W. A. (Bob) Tucker.

23-25-AnimeCentral. (E-mail) agitator@concentric.net. Ramada, Rosemont (Chicago) IL, S. Frazier, DeJesus, S. Pearl. 23-25-BAKAI-Con. (253) 535-2395, (E-mail) baka-con@luno.com, Doubletree, Seattle WA, T. McAvery, S. Sakai, Anime.

24-25-Creation Grand Stam. (818) 409-0960. (E-mail) outback@primenet.com. Pasadena CA. Commercial Star Trek show 30-May 2-DemiCon. (512) 262-6814. (E-Mail) roth @netins.net. Des Moines IA, S. & J. Robinson, Effinger, B. Hambly.

30 May 2-Corflu. (850) 763-0255. (E-mail) shelvy@beaches.net. Sandoiper Beacon, Panama City FL. Fanzine fans. 30-May 2-FederationCon, (49 821) 219-1937. (E-mail) monika@fedcon.de, Marifm, Bonn, Nirnov, McFadden, Star Trek

30-May 2-Malice Domestic, (E-mail) malice@erols.com, Renaissance, Washington DC, Mary H, Clark, Mystery fiction.

30-May 3--UK Nat'l. Star Trek Con. (E-mail) superovu.conventions@ylroin.net. Jarvis Picaciily. Manchester UK. Russ. MAY 1999

1-2-Nebula Weekend, (E-mail) Info@sfwa.org, Pittsburgh PA, SF/F Writers of America annual meet: public invited.

7-9 MarCon, Box 141414, Columbus OH 43214, (614) 470-5448, (E-mail) info@marcon.org, Hyatt. Sleve, Jackson 14-16-Osals, Box 940992, Maitland FL 32794, (407) 263-5822, Pagisson, Orlando FL, Pournelle, DiFate, Resnick, Boya.

16-23-SegTrek, 8306 Mills Dr., Box 196, Miami FL 33183, (800) 326-6735, Caribbean cruise with Trek, B5, etc., people. 21-23-ConDuit, Box 11745, Salt Lake City UT 84147, (801) 294-9297, Airport Hilton, Terry Brooks, Michael Goodwin.

21-23-VCon, 1410 Regan Ave., Coquitlam BC V3J 3B5. (604) 931-1241. Days Hotel, Surrey BC. Crispin, Capobianco.

21-23—KeyCon, Box 3178, Winnipeg MB R3C 4E6. (204) 256-9325. (E-mail) stornel@icenter.net. Louis Riel

22-24—EuroCon, Am Kattenbrauch 28, Dortmund D44287, Germany. (0049) 2301-5785. Harenberg Center. All-Europe con.

28-30-ConQuest, Box 36212, Kansas City MO 64171, (913) 768-0779. Park Place Hotel. Drake, Daniels, Straf, Tucker. 28-30-LibertyCon, Box 695, Hisson TN 37343, (423) 842-4363 (E-mail) libcon fitoric net, Ramaria Snuth, Chattanonna TN

28-30-AngliCon, Box 75536, Seattle WA 98125. (206) 789-2748, anglicon@rocketmail.com, Everett WA. British TV. 28-31-WisCon, Box 1624, Medison WI 53701. (608) 233-6850. Concourse Hotel. M. D. Russell, Windling, Datlow, Fowler.

28-31-MediaWest*Con. 200 E. Thomas, Lansing MI 48906, mdiawatcon@aol.com, Holiday Inn So, Media fanzines. **AUGUST 1999**

26-29 Conucopia, Box 8442 Van Nuys CA 91409, Anaheim CA, Pournelle, The North American SF Con (NASFIC) \$100

SEPTEMBER 1999

2-6-AussieCon 3, Box 688, Prospect Heights IL 60070. Melbourne, Australia, Gregory Benford, The WorldCon, US\$155

AUGUST 2000

31-Sep. 4-ChiCon 2000, Box 642057, Chicago IL 60664. Bova, Eggleton, Baen, Turtledove, Passovov, WorldCon, \$135. AUGUST 2001

30-Sep. 3-Millennium PhilCon, 402 Huntingdon Pk. #2001, Rockledge PA 19046. Downtown, Phile. PA. WorldCon. \$135.

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NEXT ISSUE JULY COVER Nebula and World Fantasy Award-winner Michael Swanwick, who

STORY

was one of the mainstays of our magazine last year, placing six well-received stories with us (two of which showed up in two separate SF Best Of The Year antihologies in 1999, a different story in each, returns next issue with our July cover story, kalking us sixty-five million years into the past and straight into the gaping jaws of a charging Tyrannosaurus Rex for a dever, intincate, and deadhy pavane of paradox, intrigue, killer dinosaurs, and destiny, all played out to the tune of a "Softeroz with Tyrannosaurus" his one is more fur than a barrel of primates (or tree-dwelling, shrew-like insectivores, considering the time pendoy, a odd mill salt full size of the soften or well throw you to the Tyrannosaurus" shah.) The evocative cover is by ASFA-Award winner Bob Walters, one of the top dinosaur artists in the country, who we managed to fure away froin painting murals for the Smithstonian institute just for the occasion.

Robert Reed, one of our most popular and prolific authors, returns

with another novella in his "Sister Alice" series (previous stories in the series were the aforementioned "Sister Alice." "Brother

TOP-FLIGHT WRITERS

Perfect," and last January's "Mother Death"), widescreen Space Opera of almost unbelievable scope and scale-in this one, he accelerates us on a perilous and fast-paced chase across the universe in a desperate and hair-raising search for "Baby's Fire," with a hideous death snapping at your heels every light-year of the way: acclaimed British writer Brian Stableford introduces us naked apes to "Another Branch of the Family Tree," one which we might be welladvised to saw off, if we can; Hugo- and Nebula-Award-winner Geoffrey A. Landis gives us front-row seats for an "Interview with an Artist" that raises some startling and disquieting implications: new British writer Alastair Reynolds makes a pyrotechnic Asimov's debut with a rousing tale of Faith, struggle, religious warfare, ruthless evolution, and transcendence on a future terraformed Mars, in "Angels of Ashes": William Shockley returns to take us far into an inhospitable and transhuman future, where a troubled man must decide whether or not to pursue revenge, and, if he does, what kind of revenge, in a story that tests the philosophy of "By Non-Hatred Only": and new writer Elisabeth Malartre makes her Asimov's debut by treating us to a dynamic and deadly lesson (just when you thought it was safe to go back in the forest!) in adaptation and mutation that demonstrates that "Evolution Never Sleeps."

EXCITING REFEATURES DI

mutation that demonstrates that "Evolution Never Sleeps."

Robert Silverberg's "Reflections" Column examines "YZK II: The Disaster Continues"; and Norman Spinrad's "On Books" column muses about "Mutants and Cross-Overs"; pilus an array of cartoons, poens, letters, and other features. Lock for or July 1999 issue on can now also subscribe electronically, online, at our new Astronov. Internet website, at http://www.astronovs.com/, and be sure that you internet website, at http://www.astronovs.com/, and be sure that you

FEATURES

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changed his life! -M.C., Los Angeles His studies led him to an amazing discovery about the source of bad breath: it does not originate in the digestive system. and the food you eat has no direct effect on your breath.

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